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THE ROYAL COMMISSION ON VIOLENCE IN THE COMMUNICATIONS INDUSTRY

RESEARCH REPORT

STUDIES OF TELEVISION AND YOUTH SPORTS

by

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1976



PRE-PUBLICATION COPY

The views expressed in this report are those of the author(s) and do not necessarily reflect those of the Royal Commission on Violence in the Communications Industry, whose conclusions will be presented in its Final Report.

The University of Windsor
Sports Institute for Research/Change
Agent Research (SIR/CAR) Task Force.

Faculty of Human Kinetics
University of Windsor
Windsor, Ontario, Canada.



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ABSTRACT

STUDIES OF TELEVISION AND YOUTH SPORTS

by Dick Moriarty and Ann McCabe
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A laboratory/field study was conducted to examine the effects of anti-social and pro-social media exposure on the behaviour of 259 children and youth engaged in organized team sports. Participants in Little League Baseball, minor lacrosse leagues, and/or a summer hockey school were included. Measures were obtained as to the at-home viewing habits and preferences of the players, their attitudes toward the sport in which they were engaged and the anti-social and pro-social behaviour of the players on the field, before, during, and after experimental treatment. The experimental treatment consisted of providing anti-social, pro-social and control video presentations of the relevant sport to the teams assigned to these respective treatment groups. Data were also obtained as to changes in the perception of violence resulting from the experimental treatment exposure.

The results indicate that exposure to pro-social media increases the level of pro-social behaviour and of symbolic aggression. Levels of physical aggression show no consistent relationships with media exposure. Data suggest that baseball players are essentially a different population than hockey and lacrosse players. Participants indicated that they watched a considerable amount of television, and preferred sports, cartoons, and situation comedy programs. Viewing tended to be concentrated in the evening hours. No reliable changes in the perception of violence as a result of exposure were recorded.

*SIR/CAR is a registered trademark for the Sports Institute for Research/Change Agent Research (SIR/CAR) which is housed in the University of Windsor, Faculty of Human Kinetics.

Recommendations are made for future research in the area of sports/athletics and media and especially for increasing the coverage of pro-social behaviour in sports/athletics telecasts.

CHAPTER I

STUDIES OF TELEVISION AND YOUTH SPORTS

This project was designed to bring theoreticians and practitioners together from the areas of higher education, research, sport athletics, and media to analyze relationships between media models of pro- and anti-social nature on sport or athletic behaviour in youth sports. The research analysis technique utilized is fully listed below under the IDEA model - Identification, Delineation, Experimentation, and Action.

Identification

The need for this particular study was well attested to by the high level of public concern reflected in commissions in both Canada and the United States, whose purposes have been to consider the effect of mass media and violence in the society. We can say that previous research appears to reinforce the popular notion that television is a significant variable in the escalation of aggression and violence in North American Society. In addition to determining the extent of the cause and effect relationship, we need a feasible operational system to moderate the negative effects of TV, and indeed turn the effect of TV to work for the betterment of society. A unique aspect of this study is that it incorporated not only anti-social TV input (drawn from the normal diet of North American youth), but also, pro-social media inputs (focusing on the value of skill development and cooperative behaviour).

A particular problem in the sport/athletic world has been the inability of government agencies to moderate the behavior of professional athletic teams and the level of violence which these organizations and the viewing public will tolerate. An example of this is the William R. McMurtry report entitled, "Investigation and Inquiry into Violence in Amateur Hockey".¹ Although the recommendations contained in this report are laudable, and is the direction which professional athletics and amateur sport would take if these suggestions were implemented, even the most supportive analyst must acknowledge the fact that they have to date had little effect on reducing the level of aggression and violence in either professional or amateur hockey. Certainly these recommendations do not offset the imitation of role models, apparent glorification of anti-social behaviour by "stars", the image of violence as a substitute for skill, etc., as documented weekly in public press, radio, and TV which formed the basis for concern and the initiation of this study. The media industries are concerned about the level of violence portrayed on 'Hockey Night in Canada' and other professional athletic presentations. Indeed, Ralph Melanby, the producer of 'Hockey Night in Canada', indicated that they filter out some of the anti-social behavior.² In general, an objective analyst would have to assess the normal hockey TV presentation as depicting an anti-social model for the youth of our country. For this reason, this research study incorporates not only an assessment of the cause and effect relation of violence, but a testing of the effect of pro-social television inputs which would have a high probability of being accepted by a television industry concerned about its responsibility to society and looking for negative cost Canadian content.

Basic Study Plan

The challenge of testing cause and effect vis-a-vis media and violence in sport or athletics, as well as evolving some

direction for policy implementation required an interdisciplinary task force with an operationalized system as well as the cooperation of those involved in the area of sport and athletic areas selected for investigation.

The plan for this particular study included monitoring the effect of pro- and anti-social media inputs in terms of the immediate and intermediate term effects on three specific sport activities, namely lacrosse, hockey, and baseball. The rules of the three activities cover the full range from allowable body contact with an implement to non-contact activity. The specific research design and methodology employed is described below under experimentation. In general, it involved monitoring behavior by both personal observation and media record both before and after pro- and anti-social exposure. This resulted in a strong data base of quantifiable observations. The Seeing by media or personal observation was augmented by in depth Audio interview and Written opinionaires (SAW methodology) probing participants' existing and antecedent attitudes, beliefs, and viewing behavior. One of the strengths of this particular study was that it was conducted during the summer, either at sports schools and/or over several weeks of sport/athletic activity which allowed for the elimination or control of confounding variables present during regular playing seasons.

Delineation

Thorough computer retrieval and manual investigations into extent research and development material in the area of aggression and violence have been conducted. SIR/CAR also had access to the

23,000 documents collected by the Director of Research for the J. Walker Thompson Advertising Agency in their study of media violence in the marketing industry. Therefore, the Research and Development conducted in this project will focus on anti- and/or pro-social behavior in sport or athletics, and more particularly, media audio-visual sources such as TV tapes, films (Super 8 and 16mm), slides and audio tapes available through commercial broadcasting companies or educational media centers.³ SIR/CAR had permission from Roone Arledge, Executive Producer, to review and replicate the extensive library of ABC Wide World of Sports, which is one of the most extensive in terms of variety of sports/athletics offerings, level of competitions ranging from youth sports through high level amateur sport to professional athletics, and contains numerous instances of anti-social behavior and a limited number of pro-social behaviors. These sources were augmented by hockey films from McLaren Advertising Agency producers and Hockey Night in Canada and The Molson's Sport Film Library; Canadian and Ontario Lacrosse Associations, and Peterborough Cable TV; and Major League Baseball Films. The Pro-social media samples were augmented by securing instructional films from the Coaching Association of Canada, American Alliance for Health, Physical Education, and the United States National Federation of High School Athletic Association and Recreation as well as by drawing on the extensive SIR/CAR library which has evolved during the past five years of research studies.

Experimentation (Evaluation)

The general experimental design utilized in this laboratory/field experiment is outlined below:

This research design was generally utilized for three different age groups and three separate samples in hockey, spanning a period of approximately one month as well as three different age groups in lacrosse and two different age groups in baseball (including one group of girls) for a period of time spanning one to three weeks.

The fundamental thesis investigated here was the question of whether or not exposure to media input, specifically qualitatively different (pro-social and anti-social) and quantitatively different (one week or two weeks), provide models which significantly effect the behavior of youth ranging in age from eight to eighteen.

The specific hypotheses which were investigated are listed below.

The statistical package utilized was Statistical Analysis System (SAS) and Statistical Package for the Social Sciences (SPSS) with modifications provided by the University of Windsor Computer Centre. The significance level was .05. The independent variable (pro-social or anti-social TV exposure) and dependent variables, as to social and pro-social behavior, were as stated above. Both quantitative and qualitative analysis were utilized, i.e., in addition to the specific measurements of cooperative or confrontation acts, or degree of pro- or anti-social inputs, open ended Audio interviews and Written opinionnaires based on these interviews were utilized to allow some assessment of antecedent, current and projected attitudes and behavior not only on what is probable and the level of impact, but also expression of what is desirable.

Experimental Design

Baseball (non contact sport)					
Experimental ₁	0 ₁	X _{PS}	0 ₂	X _{PS}	0 ₃
Experimental ₂	0 ₁	X _{AS}	0 ₂	X _{AS}	0 ₃
Control	0 ₁	X _c	0 ₂	X _c	0 ₃

Hockey (sporadic contact)					
Experimental ₁	0 ₁	X _{PS}	0 ₂	0 ₃	X _{PS}
Experimental ₂	0 ₁	X _{AS}	0 ₂	0 ₃	X _{AS}
Control	0 ₁		0 ₂	0 ₃	

Lacrosse (continuous contact)					
Experimental ₁	0 ₁	X _{PS}	0 ₂	X _{PS}	0 ₃
Experimental ₂	0 ₁	X _{AS}	0 ₂	X _{AS}	0 ₃
Control	0 ₁		0 ₂		0 ₃

- Key: 0 = Observation
- X_{PS} = Pro-Social Media Exposure
- X_{AS} = Anti-Social Media Exposure
- X_c = Control Media Exposure

Hypotheses

1. There is a difference in the amount of aggressive behavior shown by Ss who have been exposed to an anti-social versus a pro-social model.
2. There is a difference in the amount of pro-social behavior shown by Ss who have been exposed to an anti-social versus a pro-social model.
3. There is a difference in the amount of aggressiveness shown by Ss of different age levels after exposure to an aggressive model.
4. There is a difference in the amount of aggressiveness shown by Ss of different age levels after exposure to a pro-social model.
5. There is a difference in the amount of pro-social behavior shown by Ss of different age levels after exposure to a pro-social model.
6. There is a difference in the amount of pro-social behavior shown by Ss of different age levels after exposure to an anti-social model.

Statement of the Problem

Television pervades the Life of North American Children and Youth. Throughout elementary, secondary and indeed post-secondary education, approximately one-quarter to one-third of the youths' waking hours are spent watching television programming.⁴ Continuing efforts by the social researchers to comprehend the implications of this increasingly dominant medium on the child's development have focused narrowly on establishing the existence of a cause and effect relationship between television violence in the behavior of the young viewer.

Ironically, despite the myriad of studies which have been conducted in both the United States and Canada, little has dealt with the socially significant area of sports/athletics, which pervades the life of the vast majority of children on the Canadian/American scene. A thorough review of the literature shows that the area of amateur and school sport has been totally ignored, and that of amateur and professional athletics dealt with in a perfunctory way.⁵ Although everyone has a firm conviction (or bias) on the relative merits or demerits of television viewing (T/V) of Sport/Athletics (S/A), the fact of the matter is that virtually no research has been conducted in the area. (Lefkowitz, Walder, Eron, & Huesmann report a correlation between the amount of contact sport viewed and level of aggression in girls but not in boys).⁶ For the most part the attitudes and beliefs of the critics of TV sports/athletics are based on prejudice, myth and bias. We simply do not know the effect of television sports/athletics upon youth behaviour while engaged in sports since:

- (1) Little study has been conducted,
- (2) Until recently, researchers have largely ignored the pro-social effects of television viewing.

The reason for this lack of empirically based data may be that:

- (1) The amount of sports/athletics T.V. coverage was relatively small at the turn of this decade when other prominent commissions and serious studies were being conducted and reporting on studies of the 1960's.
- (2) The studies which have been conducted in the area of sports/athletics dealing with aggression and violence have had contradictory results which, in general, show the laboratory studies supporting the learned theory (aggression and violence begets aggression and violence); while the field studies had supported the cathartic theory (involvement in sport/athletics or to a lesser extent viewing of aggression and violence reduces the need to be aggressive and violent).⁹
- (3) There had been a swing of the pendulum in terms of sport/athletic study/research to focus on the negative rather than the positive (after almost a century of evangelizing upon sport/athletics as an unmixed blessing).

Through these study/research projects a question arose as to the quantity and quality of sports/athletic TV coverage in the nature of the content in terms of aggressive and non-aggressive projection of behavioral models. Therefore SIR/CAR carried out the study listed below:

Media Content Analysis Trends of Televised
Sports/Athletics by Colleen Valcke

The purpose of this section is to provide information and data concerning the trend of televised sports/athletics over the years 1961-1976.¹⁰ The media sports/athletics content analysis trend can

be divided into three sequential segments. The first portion examines the trend of sports coverage on television from 1961 to 1976. The second part classifies the sports/athletics covered as either very aggressive, aggressive, neutral, non-aggressive or very non-aggressive. Thus the trend as to the nature of sports/athletics televised will be reported. Thirdly, considering the nature of the sports/athletics televised, it will be noted how much of the aggressive sports/athletics versus the non-aggressive sports/athletics are shown during prime time television hours.

Hypotheses

1. There has been a significant increase in televised sports/athletics from 1961-1976.
2. There has been a significant increase in very aggressive and aggressive televised sports/athletics from 1961-1976.
3. There has been an increase in the number of hours of very aggressive and aggressive sports vs. non-aggressive and very non-aggressive sports televised during prime time from 1961-1976.
4. There has been an increase in the number of hours of aggressive and very aggressive sports coverage during prime time from 1961-1976.

Operational Definitions

Very Aggressive - where there is deliberate physical injury with
the possibility of bloodshed occurring.

Aggressive - close, deliberate physical contact with high probability
of injury occurring.

Neutral - occasional contact sport with low probability of injury
occurring.

Non-Aggressive - non-contact sport without deliberate physical
contact.

Very Non-Aggressive - non-contact sport, usually individual.

Nature of Sports/Athletics - the classification of the sports in
one of the above categories denotes its
nature.

Prime Time - prime time has been decided as follows:

Saturday and Sunday: between 1-5 p.m. and
from 7-11 p.m.

Monday through Friday: 7-11 p.m.

and it designates the largest viewing audience.

Method and Procedures

1. The data was retrieved from microfilm records of the Windsor Star. Windsor as a border city reflects the Canadian-American interface so typical of most Ontario (and indeed Canadian cities). Records were retrieved from the listings from local stations: CBS channel 2, WJBK; NBC channel 4; WWJ; ABC channel 7, WXYZ; CBC channel 9, CBET; and from 1967 to 1976 ITV channel 50, WKBD was included because at this time it was recognized as a local station with viewer access the same as the other stations.

The years studied were chosen to encompass the last decade and a half; 1961, 1964, 1967, 1970, 1973, and 1976, or every three years. In order to get a quota sample of the programs during these years, 3 months from each year were chosen, March, July, and November. From these months, the second week of each month was chosen to represent the trend occurring at that time. The week consisted of a Saturday to the Friday following.

The total number of hours of sport coverage on television are presented in Table 1 and Figure 1. Kendall's method of rank order correlation was used to assess the reliability of the increase.⁹

2. Classifications of the televised sports were arrived at through the ratings given by 30 people chosen to represent a spectrum of sport/athletic fans: men and women, students, and non-students; children, youth and adults; and business men and factory workers. They were asked to rate the sports as they perceived them (according to the author's operational definitions). Number of hours of each category are shown in Figure 2. Table 1.2 shows the number of hours of very aggressive plus aggressive sports and the number of hours of non-aggressive plus very non-aggressive sports by year. (Number of hours are summed over March, July and November to provide an overall measure for year.) Sports rated neutral are not included in this table. These data are presented graphically in Figure 3. Kendall's Tau method of rank order correlation⁹ was employed to determine whether there is an increase over years in the number of hours of very aggressive and aggressive positive (+.33) though non-significant relationship.

3. The third hypothesis concerned the number of hours of prime time coverage of the various sports categories. Number of hours

TABLE 1.1
Number of Hours of Televised Sports 1961-1976

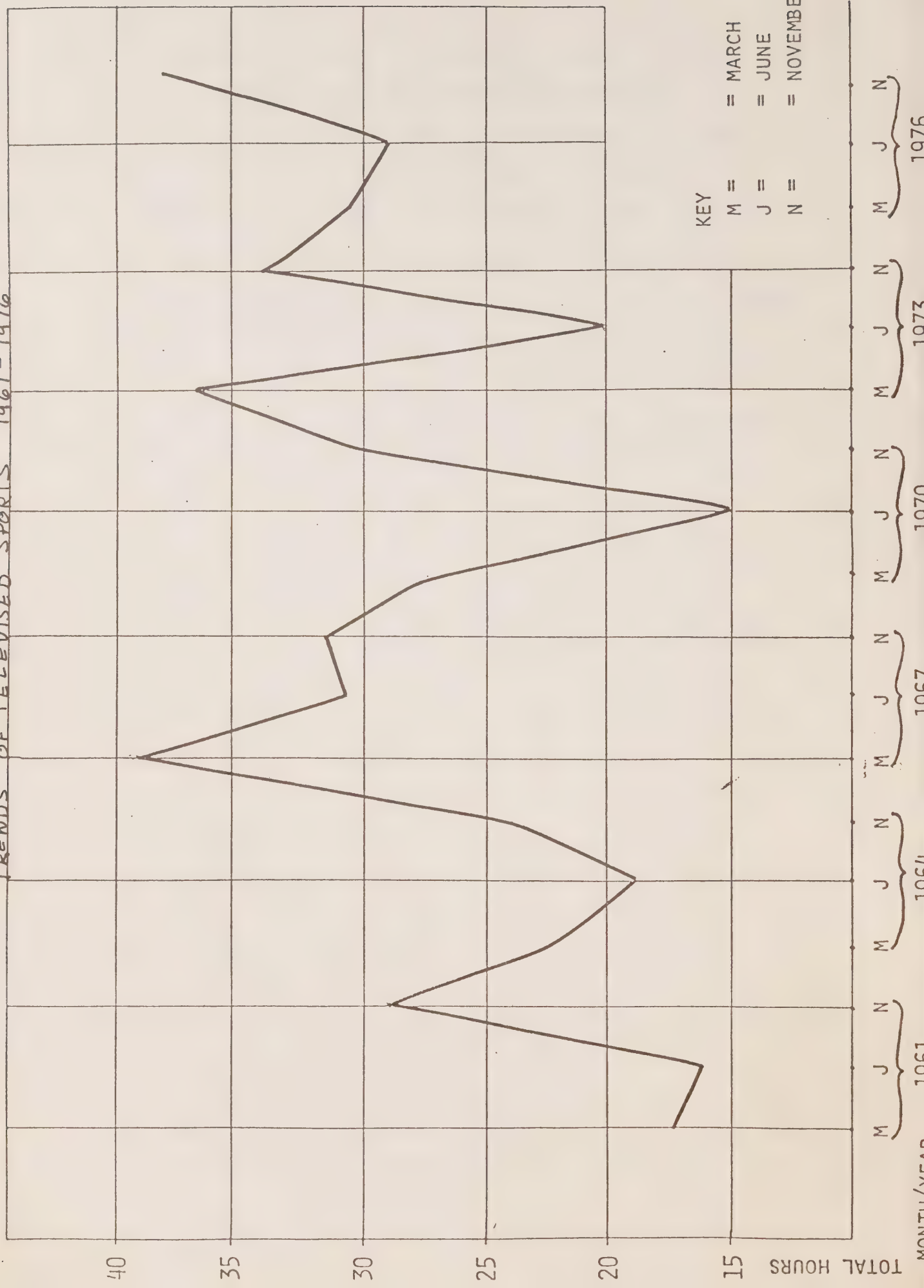
Year	1961	1964	1967	1970	1973	1976
No. of Hours	63.18	64.75	101.50	73.50	90.55	96.75

Non-parametric correlation* = .60 $p < .10$

* Kendall's Tau, see footnote 9 for source.

FIGURE #1

TRENDS OF TELEVISED SPORTS 1961-1976



TREND OF SPORTS/ATHLETIC T.V.

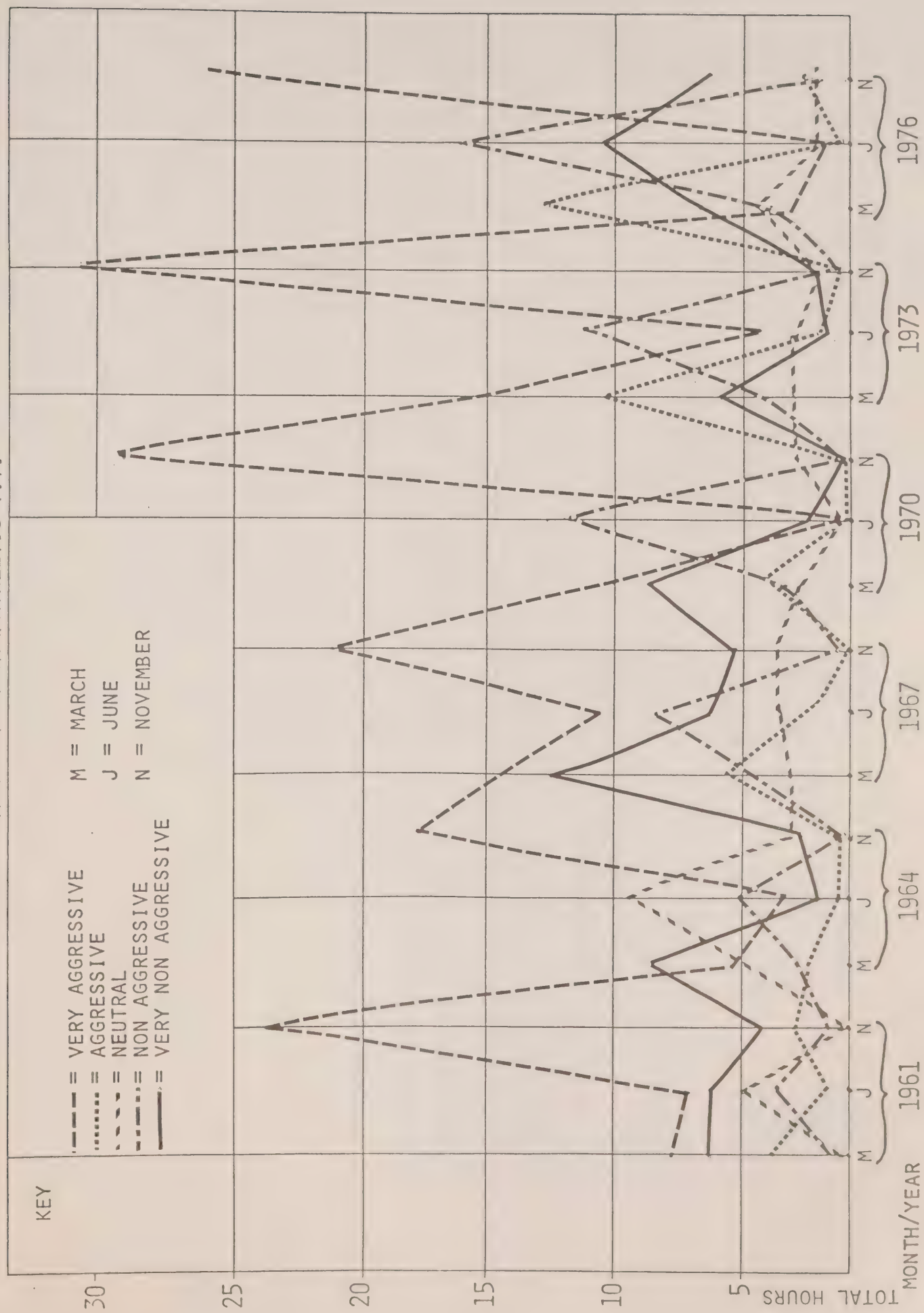


TABLE 1.2

Total Hours of Televised Sports Comparing

VA & A, to NA and VNA From 1961 - 1976

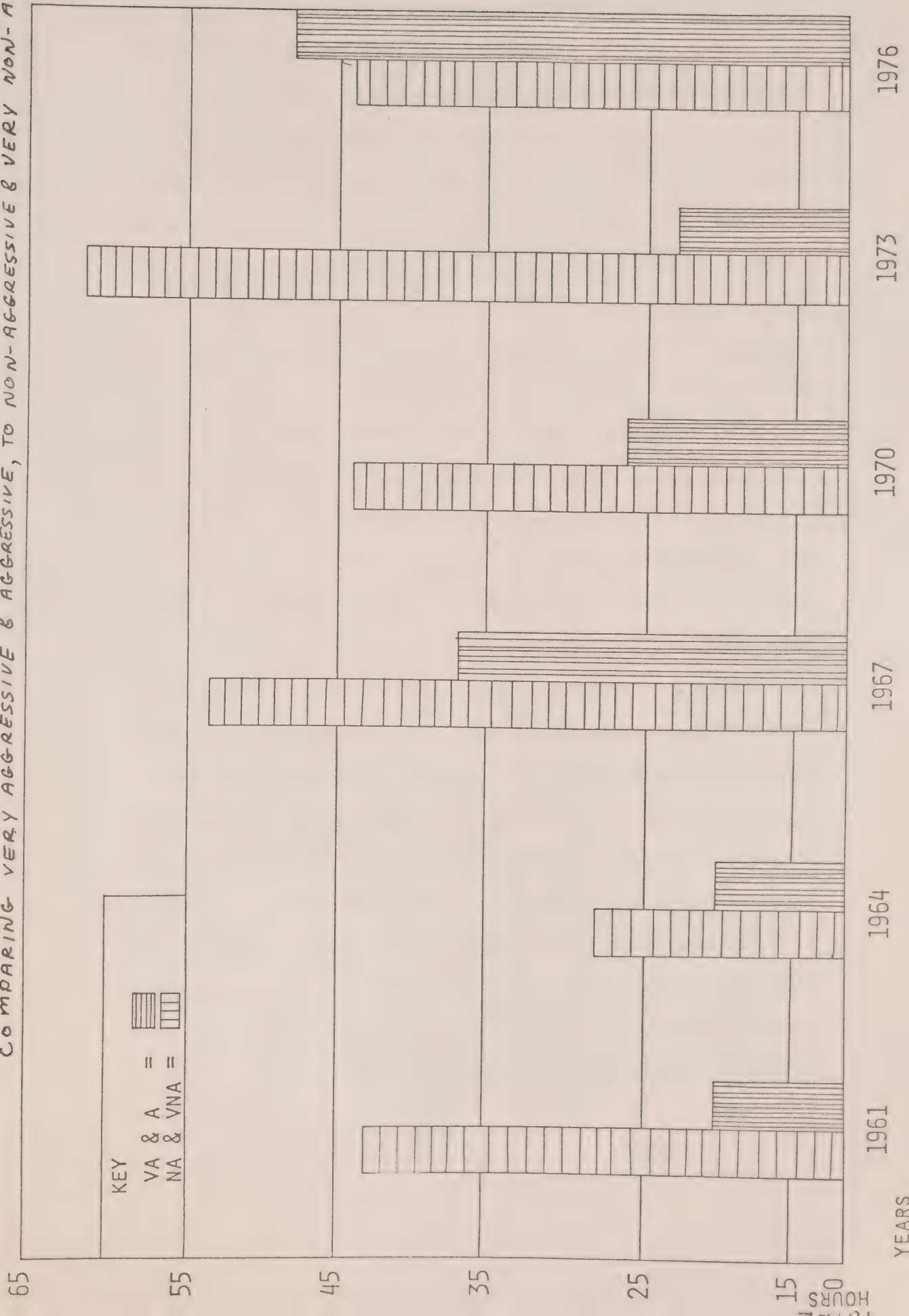
Nature of Sports	Year					
	1961	1964	1967	1970	1973	1976
Very Aggressive and Aggressive	43.25	28.50	54.50	43.00	62.00	43.75
Very Non-Aggressive and Non-Aggressive	20.60	20.25	37.50	26.50	23.80	46.25

Non-parametric correlation* = .33 nonsignificant

*Same as Table 1.1.

FIGURE #3

TOTAL HOURS OF TELEVISED SPORTS FROM 1961-1976
COMPARING VERY AGGRESSIVE & AGGRESSIVE, TO NON-AGGRESSIVE & VERY NON-AGGRESSIVE



of very aggressive and aggressive sports were summed as were the number of hours of non-aggressive and very non-aggressive. Data are presented in Table 1.3 and Figure 4. In order to test this hypothesis the difference between the number of hours of the aggressive categories and the number of hours of the non-aggressive categories was calculated. These values were then correlated with year in order to obtain an index of the degree to which there has been an increase in the proportion of aggressive and very aggressive sports over time. A non-parametric correlation of $-.20$ (non-significant) is obtained.

4. The fourth hypothesis concerned the absolute number of hours of aggressive and very aggressive sports during prime time over the years studied. The data were summed over these two categories and over the three months for each year. The data are those presented in Table 1.3 and Figure 4. The non-parametric correlation obtained is $+.47$ (non-significant).

The data indicate that there is an increase in the absolute amount of sports coverage over the years studied and a moderate trend toward an increase in the amount of aggressive and very aggressive content. Regarding prime time coverage the data show an overall increase in the number of hours of aggressive and very aggressive sports over time but a slight decrease in the proportion of these categories. Taken together these findings indicate that while the coverage of the aggressive categories has increased both overall and during prime time, the coverage of the non-aggressive categories of sports has at least kept pace.

TABLE 1.3

Total Hours of Televised Sports Viewed at Prime Time Comparing Total Hours
of VA and A to VNA and NA From 1961 - 1976.

Nature of Sports	Year				
	1961	1964	1967	1970	1973
Total Very Aggressive	36.25	23.00	50.00	39.00	56.25
Total VNA & NA	9.34	11.75	26.00	19.50	21.75
Difference (VA + A) - (VNA + NA)	26.91	11.25	24.00	19.50	34.50
					2.50

Non-parametric correlation* for proportion of very aggressive and aggressive = -.20 non-significant.

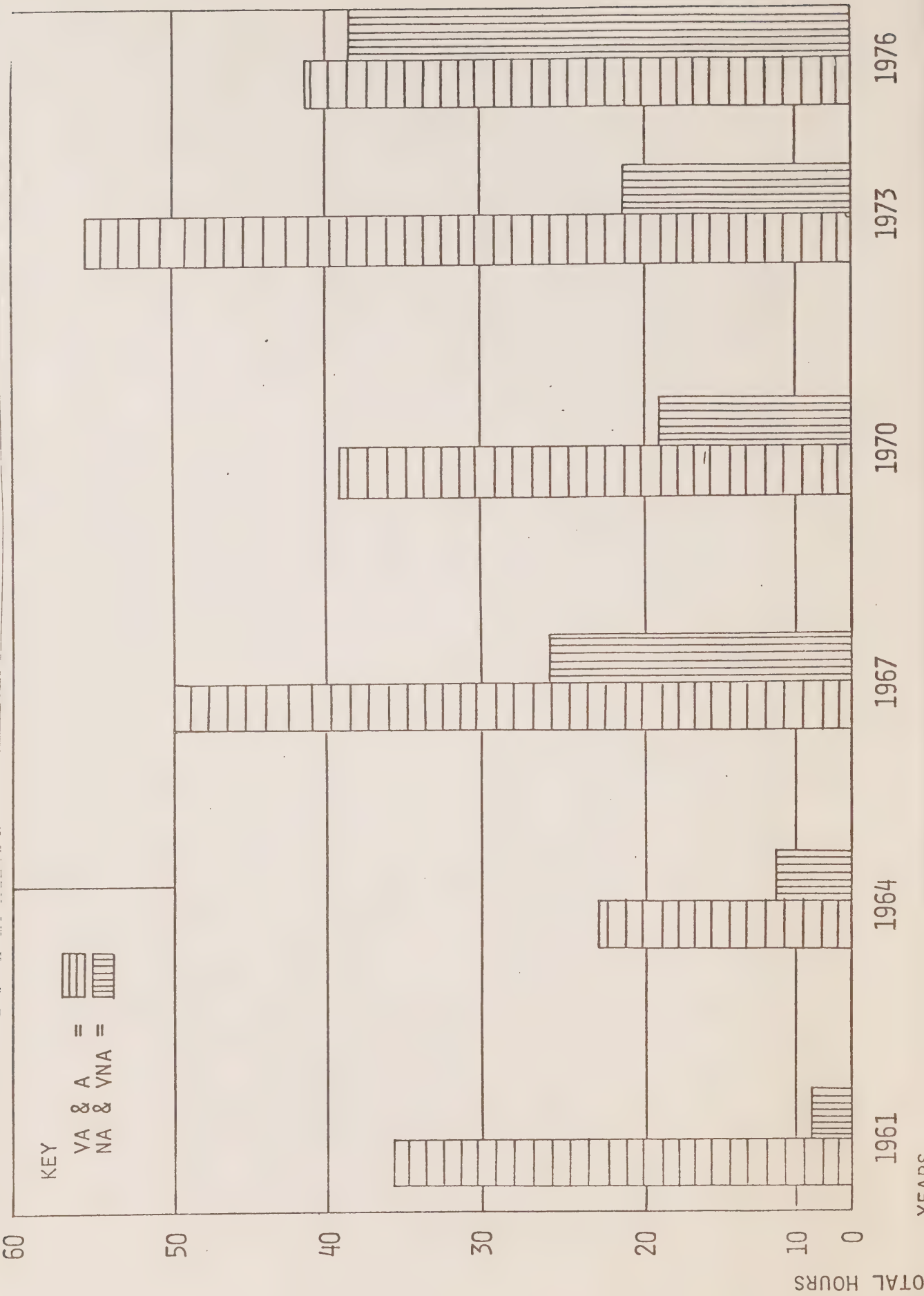
Non-parametric correlation* for increase in very aggressive and aggressive during prime time = +.47 non-significant.

*Same as Table 1.1

TOTAL HOURS OF TELEVIEWED PRIME TIME SPORTS

VA & A VS, VNA & NA 1961-1976

FIGURE # 4



¹See William R. McMurtry, Investigation and Inquiring into Violence in Amateur Hockey; Report to the Ontario Minister of Community and Social Services, (Toronto, Ont.; Ministry of Community and Social Services, 1974). See also John McMurtry, "Sport or Athletics: A Conceptual Analysis," and Bernie Parish, "They Call it a Game," in Sport or Athletics; A North American Dilemma (edited by J. Alex Murrar). Proceedings of the 15th Annual Canadian American Seminar (Windsor, Ont.; Canadian American Seminar, 1973).

²Statement by Ralph Melanby to Dick Moriarty in telephone interview and to Attorney General Roy McMurtry quoted on CBC-TV National News and in The Toronto Globe and Mail, March, 1976.

³(See acknowledgement for Sources and Appendix A for a list of sources utilized for pro- and anti-social treatment).

⁴See Charles K. Atkin and Bradley S. Greenberg, "Family Child and Message Factors Mediating Children's Pro-social Learning from Television," paper and Proceedings of the Symposium on Perspectives on the Influence of Television on the Development of Children, Annual Convention of the American Educational Research Association, held at San Francisco, April, 1976.

⁵See Report of the National Commission on the Cause and Prevention of Violence (Doctor Milton S. Eisenhower, Chairman), (January, 1969) Washington, D.C.; U.S. Government Printing Office; and Television and Growing: the Impact of Televised Violence. Report to the Surgeon-General (Washington, D.C.: U.S. Printing Office, 1972). See also the annotated Bibliography which is appended to this report and which was compiled by a manual computer retrieval by the SIR/CAR Task Force on Research and Development working in co-operation with the Education Research Information Centre (ERIC) of the University of Oregon, and the Lockheed Interspace Retrieval System (LIRS).

⁶Monroe M. Lefkowitz, Leopold O. Walder, Leonard D. Eron, and L. Rowell Huesmann. "Preference for Televised Contact Sports as Related to Sex Differences in Aggression." Developmental Psychology, 9(3), 1973, 417-420.

⁷See also Timothy T. Craigs (Ed.), Humanistic and Mental Health Aspects of Sport, Exercise and Recreation, (Washington, D.C.: The American Medical Association, 1976).

⁸See Coleen Valcke, "Media Content Analysis Trends of Televised Sport/Athletics, 1961-1976," Class Project for Dick Moriarty and James Duthie, University of Windsor, in Course 459c, Aggression and Violence in Sport/Athletics, Fall, 1976 (available from SIR/CAR).

⁹Sidney Siegel. Non parametric statistics for the behavioural sciences. (Toronto, Ontario, McGraw-Hill Book Co., 1956).

CHAPTER II

RESEARCH DESIGN

This chapter outlines the specific research design as well as the method of collecting and analyzing the data. In a general way, this study falls in the area of laboratory/field experimental research in that the subjects were exposed to pro-social and anti-social TV viewing (T/V) presentation in their sports (baseball, lacrosse and hockey) and their behavior was monitored before and after exposure by the Seeing Personal Observation Team. In addition, any changes in perception of aggression or violence were pre- and post tested, utilizing binocular rivalry. Survey and descriptive research was involved through the Audio and Written opinionnaires which provided the subjects with an opportunity to indicate their attitudes, beliefs, and behavior not only in TV viewing but also sports participation, and their perception of the attitudes and behavior of significant others (parents) to their TV viewing habits. The behavior of the subjects while viewing the TV treatment was also monitored by the Seeing Media Project Team (slides and Porta Pak T.V.) as well as a separate T/V personal observation team which recorded facial reaction to the T/V treatment as well as positive and negative verbal reaction.

The distinguishing independent variable was exposure to approximately one hour of either anti-social or pro-social sport/athletics films drawn from either the professional or high amateur levels. The dependent variable was the physical and verbal behavior of the subjects. In an effort to control confounding variables, the study was conducted in a laboratory/field setting either early in the regular season of play (baseball) or in sport/athletic summer schools or leagues focusing on instruction as opposed to competition (lacrosse

and hockey). By virtue of this field setting, the principal investigators were able to eliminate one of the major potentially confounding variables, namely the evolutionary increase in aggression and violence as the regular season proceeds from early to late playoffs and/or tournaments.¹

Data of both a quantitative and qualitative nature were involved and therefore, a spectrum of statistical analysis techniques was utilized. Computer analysis employing the Statistical Package for the Social Sciences (SPSS), which is predominantly a non-parametric system, was utilized for some of the data of the Seeing personal observation participation and TV viewing project team, Binocular Rivalry and Written opinionnaire. In addition, parametric analysis was utilized in the Seeing personal observation participation and binocular rivalry data. The .05 statistical level of significance was utilized throughout (although some of the more significant trends and results up to the .10 level are reported). Correlational techniques were utilized to assess the associations among the various dependent and independent variables.

Task Force Model and Methodology

Approximately one month was devoted to finalization of instrument development and liaison with the sport/athletic organizations (May); roughly one month each to collecting the data in each of the sports (June-August); and approximately four months in processing and analyzing the raw data and writing up the final report (September-December).

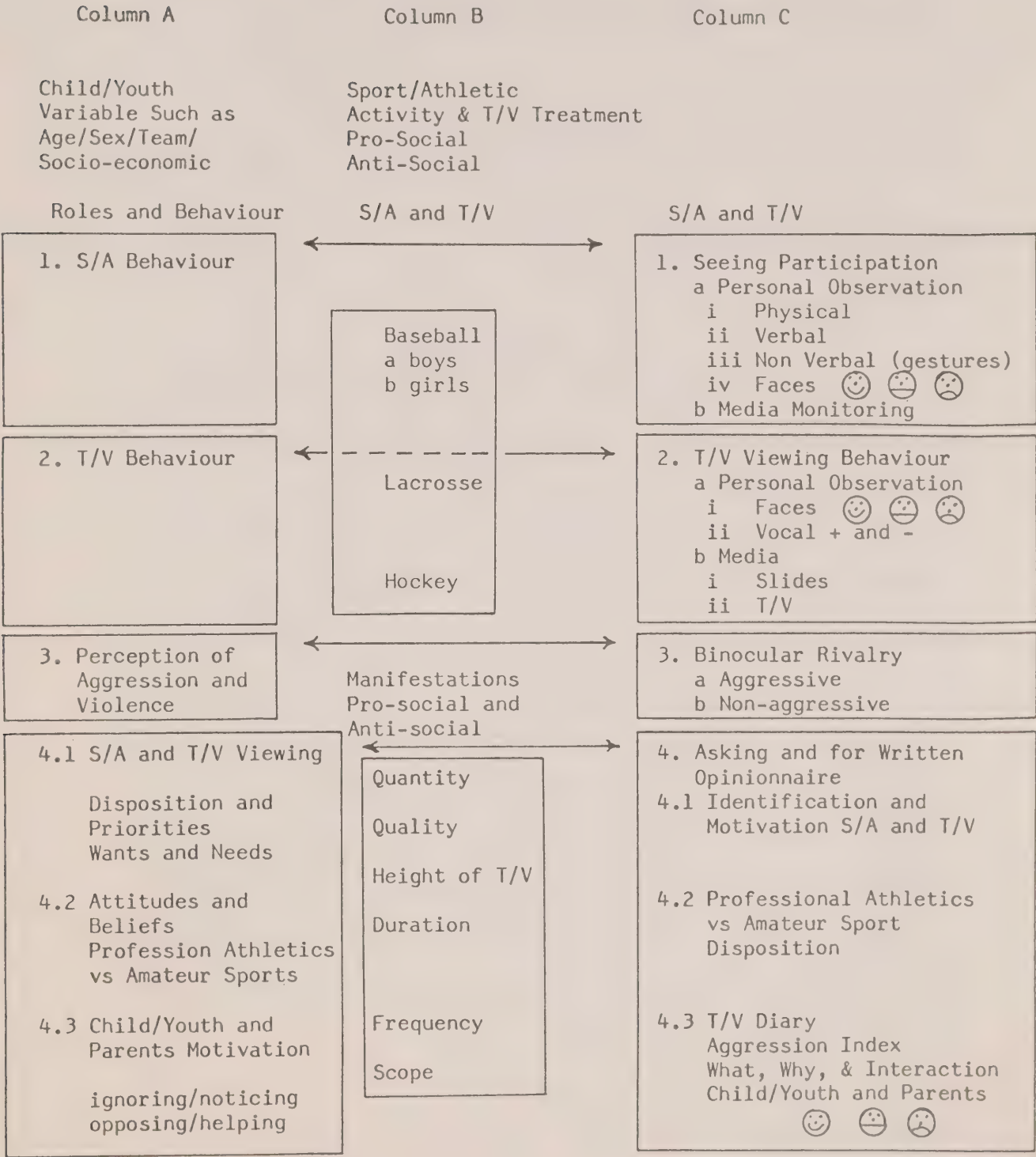
The task force agreed upon the modified SIR/CAR - Sports/Athletics Model and Method listed below. As can be seen from the vertical axis, the focus of attention was upon the child/youth in sport/athletics. In terms of the child/youth subjects, consideration was given to such variables as age; sport/athletics and TV viewing behavior; perception of aggression and violence; sport/athletics and TV viewing disposition and priorities; attitudes and beliefs on professional athletics vs. amateur sports; and child/youth and parental motivation, behavior, and interaction in viewing TV.

The second column lists the sport/athletic activities (baseball, lacrosse, hockey and women's baseball) in which the children/youth were involved and in which they received the media models (pro-social and anti-social).

The third vertical column lists the specific methodology which was utilized, mainly:

- (1) Seeing participation in the sport/athletics by personal observation and media monitoring of physical, verbal and nonverbal gestures as well as facial behavior;
- (2) TV Viewing behavior which monitored facial behavior as well as vocal positive and negative response to both pro-social and anti-social TV presentations;
- (3) Binocular Rivalry testing for changes in the perception of aggressive and non-aggressive behavior;
- (4) Asking and Written opinionnaire including: Section I-Identification

SPORT/ATHLETIC (S/A) PARTICIPATION AND
TELEVISION VIEWING (T/V) MODEL AND METHOD



Data on Motivation for Sport Participation and TV Preferences;
 Section II--on Professional Athletic vs. Amateur Sport
 Disposition; and Section III--The TV Diary on Aggression Index
 Identifying What and Why Children/Youths View TV and How
 Their Parents React.

Project teams were organized to carry out each of these four phases of the study. In addition, there was a project team for TV Media Treatment responsible for securing categorizing, and showing the TV treatment tapes.

Definition of Terms

One of the first challenges for the task force was to agree upon a definition of terms. After extensive discussion, the following guidelines were adopted:

(1) Pro-social behavior in TV Models and sport/athletic participation; in general it was agreed that this encompassed socially accepted acts that children/youth are generally encouraged to display in our society. It was a general consensus of opinion that the potential for television to contribute to pro-social learning although recognized in recent years, has to a large extent been ignored. Pro-social behavior or attitudes were envisioned to include altruism, sympathy, courtesy, reparation, and affection:

(a) Altruism - Display of communication and physical behavior with regard to other's interests, including sharing, cooperating, helping, encouraging, and teamwork.

(b) Sympathy - Communication expressing positive feelings for another's plight, such as concern, compassion, pity, and caring.

(c) Courtesy - Verbal and behavioral displays of respect or deference for others, including taking turns, holding doors, waiting in line, thanking, and minding.

(d) Reparation - Communicative act of correcting a wrong committed against another, involving confession, contrition, or apology.

(e) Affection - Overt physical or verbal expression of positive feelings toward another, including compliments, hugging, and shaking hands.

(2) Anti-social behavior in TV models and sport/athletics participation:

In general it was agreed this would encompass socially unacceptable acts that children are generally discouraged from displaying in our society. Anti-social behavior included excessively aggressive or violent behavior in sport/athletics. The question of anti-social behavior as an effect of TV violence has of course been studied in hundreds of investigations and debates in numerous government forms.

"Almost everyone accepts the conclusion that under some circumstances, watching violence increases the likelihood of some form of aggression."²

(p. 64). Anti-social behavior can be defined broadly to include desensitization to the suffering of others, withdrawal from social situations, etc., which may also be affected by media portrayals.²

Assuming, however, that in contemporary terms, anti-social behavior is primarily looked upon as aggressive or violent behavior, the emphasis was placed on monitoring of active physical aggression, verbal aggression, and non-verbal aggression (gestures, etc.).

Observations of the behavior of players involved recording the number of incidents of four categories of aggressive and pro-social behaviour within a given playing segment. Physical aggressive behaviours included the pushing, hitting, bumping, etc., either with the body or with an implement of another player, official, or coach by any player of the team being observed. Verbal aggressive behaviours included any utterance by a player of the team being observed which would likely be interpreted by the recipient as negative comment. Non-verbal aggressive behaviours included acts which, although not verbal were symbolic in nature. These included acts which could be interpreted as threatening physical aggression, e.g. holding a clenched fist in another's direction, and stylized gestures, eg. 'thumbs down.' Pro-social behaviours included any physical or symbolic act directed at another which would likely be interpreted by the recipient as supportive, encouraging, or approving.

Observation periods were defined separately for the three sports. In baseball each team was observed for each inning of the game and then an average of the number of incidents of each of the categories of behaviour per inning was computed for each of the teams. Lacrosse teams were observed for each of the periods of play and an average then computed of the number of incidents of the behaviours per period for each team. Hockey groups were observed for twenty minute periods on the ice and averages of the number of incidents of each type of behaviour were computed for each of the activities for each group. For the final analyses of the data a single mean score on each of the classes of behaviour was calculated for each team by averaging over all the game observations for that team.

These manipulations were necessitated by statistical considerations. They resulted in a rather small number of observations for analysis but also provided measures which can be considered highly stable and reliable.

Monitoring TV Viewing

The project team monitoring the behavior of children/youth while viewing the pro-social or anti-social treatment TV films focused more specifically on the verbal and non-verbal behaviour as opposed to physical. The facial reaction of the subjects was recorded every three minutes of the film (happy, neutral, and frowning)³ and between each facial observation all positive and negative verbal comments were recorded.⁴

Selection of Media Presentations

In categorizing films into pro-social and anti-social behavior the frequency of obvious pro-social and anti-social manifestations was observed and then categorized on a one to ten scale of aggression (with non-aggressive equal to one and aggressive equal to ten). The cumulative score allowed rough categorization into anti-social or pro-social film. In addition to the frequency of acts considered, duration of time and intensity were also taken into consideration. In a general sense, confrontation was considered as anti-social and cooperation as pro-social.

Sport/athletics do not allow an absolute standard for behavior since the nature of different sport/athletics and their rules accommodate varying levels of physical contact which ultimately allow greater or lesser amounts of inevitable physical and verbal aggression. For example, because of the rather low frequency of physical contact in the game of baseball, anti-social behaviour is frequently expressed by verbal aggression; whereas, hockey competitors are more prone to physical aggression. Spectators in both activities depend primarily upon verbal aggression (although sporadic physical violence in the stands is becoming more common). The following elements were considered in determining the pro- or anti-social nature of the sports films:

- cooperation or lack of cooperation towards team members and opponents,
- verbal aggression towards team members, opposing members, coaches, referees or umpires.
- team cohesion displayed by encouragement and reassurance of performance,
- team alienation displayed by disapproval and condemnation of performance,
- general sportsmanlike or unsportsmanlike behavior,
- general attitude of players being friendly or hostile,
- positive or negative reinforcement by coach or manager,
- crowd reaction - supportive or non-supportive, and
- any direct acts of physical violence

In addition, the positive or negative nature of such variables as pre-, during, and post-game; intra- and inter-team interaction, as well as interpersonal transactions among or between players, coaches, spectators, and officials were taken into consideration. Once the project members had categorized films (and/or in some instances edited), a panel of experts from the school/amateur sport of professional athletic field were brought in to view videotapes that were to be shown as pro-social or anti-social treatment, and further to rate them on a scale of one to ten as either pro-social or anti-social. There was 100% agreement between the sport/athletic practitioners, and the university research and project members on the categorization into pro-social and anti-social film; and further, the ranking on a one to ten scale showed a correlation of approximately .80. Shows were videotaped by the University of Windsor Media Centre and are now maintained in the project video library. Video-tapes presented as treatment are listed below:⁵

TABLE 2.1

Videotapes Presented by Treatment Condition

<u>Pro-Social</u>	<u>Hockey</u>	<u>Anti-Social</u>
1968 Stanley Cup Cut #1 (25 mins.) St. Louis vs. Montreal		1969 Stanley Cup Cut #II (25 mins.) St. Louis vs. Montreal
1975 Stanley Cup (25 mins.) Philadelphia vs. Boston		1973 Stanley Cup (30 mins.) Boston vs. Montreal
	<u>Lacrosse</u>	
Lacrosse - Cut #1 - The Fastest Game on 2 Feet (14 mins., 16 mm & VTR)		Minto Cup Lacrosse (28 mins., videotape) Mississauga vs. Burnaby
Lacrosse - Cut #II - Lacrosse is Everybody's Game (14.5 mins., 16 mm & VTR)		Mann Cup Lacrosse Part II (12 mins., videotape) Vancouver vs. Peterborough
Mann Cup Lacrosse Part I (60 mins., videotape) Vancouver vs. Peterborough		
	<u>Baseball</u>	
1974 World Series (27 mins.) Los Angeles vs. Oakland		1969 World Series (27 mins.) New York vs. Baltimore
1975 World Series (37 mins.) Cincinnati vs. Boston		1972 World Series (40 mins.) Cincinnati vs. Oakland

FOOTNOTES

¹See Ann Marie Guilmette, Dick Moriarty and Megid Ragab, "A Strategy for Changing Organizations: A Case Study of Little League Baseball," to be published in the Journal of Physical Education and Recreation; 1977; abstracted and reprinted from Megid Ragan and Dick Moriarty, "A Strategy for Changing Organizations"; and Ann Marie Guilmette and Dick Moriarty, "Windsor District 5 Little League Baseball," in Proceedings of the Canadian Association of Administrative Sciences, Laval University Quebec City, Quebec, June 2, 1976. See also Ann Marie Guilmette and Dick Moriarty, "Crisis in Amateur Sports Organizations Viewed by Change Agent Research," Proceedings of the International Congress of Physical Activity Sciences, (July 12, 1976) Quebec City, Quebec.

²Richard Gorenson, "Television Violence Effects: Issues and Evidence," Report to the Ontario Royal Commission on Violence in the Communications Industry, 1977.

³See Paul Ekman and Wallace B. Friesen, Unmasking the Face, (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1975).

⁴This methodology has been used extensively on SIR/CAR studies and monitoring the behaviour of both participants and spectators at sport/athletic events.

⁵A number of video tapes became available after the study was completed. These tapes are available to other investigators from SIR/CAR. A list is provided in Appendix C.

CHAPTER III

PROFESSIONAL ATHLETIC/AMATEUR SPORT PARTICIPATION (S/A) AND T.V. VIEWING (T/V) -- PRO-SOCIAL AND ANTI-SOCIAL TO MODELS

In order to understand the trait, situation, and behavior of the children/youth involved in this study, the written opinionnaire survey was administered to identify the sports/athletics and TV viewing habits, attitudes, beliefs, and behavior of the subjects. This collection of baseline and exploratory survey data was to provide an initial "shake down" of the variables and isolate those variables which account for the bulk of variance of behavior influenced by other TV viewing and/or sports/athletic participation. Approximately one month was devoted to developing, pilot testing, and finalizing the opinionnaire. Subsequently, the opinionnaire was printed, distributed and retrieved at the initial meeting of each sport/athletic group, and subsequently processed. Full details of the process involved and the results obtained are contained within this chapter.¹

Preparation of the Project Team for the Study

Three honours undergraduate project leaders were selected on the basis of previous experience with previous SIR/CAR studies. Each of these leaders acted as liaison person with either baseball, lacrosse, or hockey, and were in charge of developing and distributing a written opinionnaire.²

Classroom Training and Audio Visual Orientation

The three project leaders studied opinionnaires from previous projects in order to select the most pertinent items for inclusion in the present opinionnaires. Further the items

were developed by the members, pertinent to the types of TV shows the children/youth watched, why they watched them, and how their parents feel about these shows.

On Site Training and Adjustment

The initial opinionnaire was pilot tested and revised as listed below. Similarly, distribution and retrieval of the opinionnaire were adjusted in order to fit the given situation. When subjects were too young to read the opinionnaires it was read to them and the meaning of difficult words was explained. Older subjects were given the opinionnaire to do on their own, but supervisors were always present to answer any questions, and to collect completed opinionnaires. When dealing with Little League Baseball, opinionnaires were distributed at two different locations in grade school gymnasiums. Opinionnaires were distributed in the lobby of the arena to both the lacrosse players and hockey players.

Principal investigator Dick Moriarity conducted indepth audio follow-up interviews with a random sample of children/youth who had filled in the opinionnaire. During the course of the interview the subjects were asked to indicate:

- (1) What the question meant to them;
- (2) What their response had been; and
- (3) What their response meant.

These audio tapes were shared with the other principal and associate investigators and all were satisfied as to the validity, reliability, and objectivity of the instruments.

Number of Project Members

Three project leaders were assigned to the audio/written portion of this study. Three TV personal observers also helped in the distribution and retrieval of questionnaire/opinionnaire.

Procedure for Collecting Data

The final opinionnaire which was utilized included questions dealing with the following:

- (1) What the players like most about their sport;
- (2) What the players like least about their sport
- (3) Number of hours the players watch TV;
- (4) The type of show players like;
- (5) Whether the players are Amateur Sport or Professional Athletic orientated;³
- (6) Listing of the TV shows they watch on a particular day;
- (7) How often they watch the show, why they watch the show, whether their parents like the show or not, whether their parents watch the show and how the players feel after watching the show.⁴

The questionnaire can be divided into three major sections:

- (1) Player's questionnaire which provided identification information such as the age, sex, sport, the number of hours that the subjects watched TV during the summer and winter, as well as the time of the day when they watched TV, ranking of the type of shows that they liked first. best and second best, ranking of the first and second preference sport programs regularly shown on TV, and ranking of their first and second preference on sport shows shown occasionally on TV.

(2) Project Competition Concern which provided an opportunity for respondents to express their attitudes and beliefs in terms of support for professional athletics (quality greater than quantity) as opposed to amateur/school sport (quantity greater than quality) by means of thirteen forced choice questions dealing with such variables as ultimate goal, aim and objective, time commitments and emphasis in player selection.

(3) TV Diary Index which allowed listing of actual TV shows which had been viewed by the subjects, as well as a statement as to the frequency, motivation, and feeling of the subjects while viewing these shows, and the attitude and behavior of their parents while the subjects were viewing these shows.

Location on the Site

(1) Baseball - the opinionnaire was distributed in either the Coronation or William Davis Public School gymnasium to the entire sample of baseball players.

(2) Lacrosse - the opinionnaire was distributed in the Adstall Arena Lobby after game sessions, to the various age groups of lacrosse players, i.e., Tyke/Novice, PeeWee/Bantam, and Midget/Juvenile.

(3) Hockey - the opinionnaire was distributed during lunch breaks at St. Clair Beach Arena to the various groups of hockey players i.e., Group A = low skill level, Group B = average skill level, and Group C = high skill level (corresponding roughly to age groups).

Project leaders, along with help from TV personal observers distributed and collected the opinionnaires at the various locations.

Treatment of the Raw Data

The results of this analysis were recorded on actual copies of the opinionnaire for each of the groups or sub-groups listed below: ¹

- (a) overall results $N = 259$ including all subjects from baseball, lacrosse and hockey;
- (b) hockey $N = 152$;
- (c) lacrosse $N = 45$;
- (d) boys baseball $N = 44$;
- (e) girls baseball $N = 14$.

The difference in the size of the sample for each of the sports involved is a reflection of the size of the population. Hockey provided the largest population and therefore the largest sample, followed by boys' baseball and lacrosse. Hockey players provided something of a captive audience since they were attending the school from 9:00 a.m. to 4:00 p.m. Lacrosse and baseball teams were non-captive and not all players completed the opinionnaires. Little league baseball for girls is in the early stages of development in the Windsor region. Only one league exists at present which necessitates considerably cross city travel for these players. Since completing of the opinionnaires and providing of media treatments took place at other than the usual game times, extra travel was involved for the girls. Presumably as a consequence of this requisite extra effort few girls appeared to complete the opinionnaire. Their data are provided, however, as suggestive of trends. Few girls also later appeared for the media treatment sessions. Thus, no results for the effect of media treatment are available.

N = 259

Identification Sport/Athletic
Participation (S/A-P) and TV Viewing (T/V)

PLAYER QUESTIONNAIRE - Overall

1. Age _____ 2. Sex a) Male 3. Sport _____
 b) Female
 $\bar{x} = 12 \pm 5$, Median = 12
 Mode = 11, Min. = 5, Max. = 20 4. Team Name _____

5. What do you like most about your sport? 1) Skills=22% 2) Game itself=17%
3) Action=16% 4) Rewards=15% 5) Fun, enjoyment=11% 6) Aggression=9%
7) Winning=6% 8) Fitness=2% 9) Achievement=2%

6. What do you like least about your sport? 1) Not playing=23% 2) Aggression=11%
3) Drills & practice=14% 4) Losing=13% 5) Injuries=12% 6) Nothing=9%
7) Equipment=6% 8) Referees=6% 9) Coaching=2%

7. Number of hours/wk that you watch T.V. during the summer $\bar{x} = 25.14$ hrs,
Median=24 hrs, Mode=10 hrs, Range=40 hrs, Min.=10 hrs, Max.=50 hrs

8. Time of day when you watch the most T.V. during the summer

morning	20%
afternoon	70%
evening	10%

9. Number of hours/wk that you watch T.V. during the winter
 $\bar{x} = 26$ hrs, Median=24, Mode=10 hrs, Range=40 hrs, Min.=10 hrs, Max.=50 hrs

10. Time of day when you watch the most T.V. during the winter	
morning	14%
afternoon	12%
evening	74%

11. What type of show do you like best? Rank 1-6				1 = best
	mystery	<u>11%</u>	drama	<u>5%</u>
1st best	comedy	<u>20%</u>	cartoons	<u>16%</u>
	adventure	<u>5%</u>	sport	<u>39%</u>
				6 = least

11. What type of show do you like best? Rank 1-6		1 = best
	mystery <u>13%</u>	drama <u>4%</u>
2nd best	comedy <u>29%</u>	cartoons <u>23%</u>
	adventure <u>12%</u>	sport <u>19%</u>
		6 = least

12. Of these sports programs shown regularly on T.V. which do you watch the most? Rank 1-9.

1 = best
9 = least

1st best	hockey	<u>7%</u>	baseball	<u>9%</u>
	basketball	<u>5%</u>	golf	<u>2%</u>
	car racing	<u>4%</u>	football	<u>5%</u>
	wrestling	<u>3%</u>	tennis	<u>2%</u>
	bowling	<u>4%</u>		

12. Of these sports programs shown regularly on T.V. which do you watch the most? Rank 1-9.

1 = best
9 = least

2nd best	hockey	<u>10%</u>	baseball	<u>8%</u>
	basketball	<u>12%</u>	golf	<u>5%</u>
	car racing	<u>22%</u>	football	<u>10%</u>
	wrestling	<u>9%</u>	tennis	<u>2%</u>
	bowling	<u>2%</u>		

13. Of these sports programs shown occasionally on T.V. which do you watch the most? Rank 1-9. 1 = best
9 = least

1st best	gymnastics	<u>12%</u>	soccer	<u>11%</u>
	track & field	<u>18%</u>	swimming	<u>13%</u>
	boxing	<u>24%</u>	skiing	<u>9%</u>
	horse racing	<u>7%</u>	Synchro-	
	volleyball	<u>2%</u>	Swimming	<u>4%</u>

13. Of these sports programs shown occasionally on T.V. which do you watch the most? Rank 1-9.

1 = best
9 = least

	gymnastics	<u>7%</u>	soccer	<u>9%</u>
2nd best	track & field	<u>23%</u>	swimming	<u>20%</u>
	boxing	<u>17%</u>	skiing	<u>10%</u>
	horse racing	<u>7%</u>	Synchro-	
	volleyball	<u>5%</u>	Swimming	<u>3%</u>

N = 152

Hockey Results
Identification Sport/Athletic
Participation (S/A-P) and TV Viewing (T/V)

PLAYER QUESTIONNAIRE

1. Age _____ 2. Sex a) Male _____ 3. Sport _____
 \bar{x} = 12 \pm 5 yrs, Median = 12 yrs b) Female _____
 Mode = 10 yrs. Range = 12 yrs, Min. = 6 yrs 4. Team Name _____
 Max. = 18 yrs
5. What do you like most about your sport? 1) Rewards = 21% 2) Action = 19%
 3) Skills = 16% 4) Game itself = 13% 5) Fun, enjoyment = 12%
 6) Aggression = 9% 7) Winning = 5% 8) Fitness = 4% 9) Achievement = 2%
6. What do you like least about your sport? 1) Aggression = 19% 2) Injuries = 16%
 3) Drills, practices = 16% 4) Losing = 13% 5) Nothing = 13% 6) Not Playing = 11%
 7) Equipment = 6% 8) Referees = 4% 9) Coaching = 2%
7. Number of hours/wk that you watch T.V. during the summer _____
 \bar{x} = 26 \pm 13 hrs, Median = 27 hrs, Mode = 30 hrs, Range = 40 hrs, Min. = 10 hrs, Max. = 50 hrs
8. Time of day when you watch the most T.V. during the summer
 morning 22%
 afternoon 7%
 evening 71%
9. Number of hours/wk that you watch T.V. during the winter _____
 \bar{x} = 28 \pm 14 hrs, Median = 27 hrs, Mode = 30 hrs, Range = 40 hrs, Min. = 10 hrs, Max. = 50 hrs
10. Time of day when you watch the most T.V. during the winter
 morning 13%
 afternoon 9%
 evening 78%
11. What type of show do you like best? Rank 1-6
 mystery 7% drama 7%
 1st best comedy 17% cartoons 17%
 adventure 5% sport 46%
11. What type of show do you like best? Rank 1-6
 mystery 9% drama 4%
 2nd best comedy 31% cartoons 23%
 adventure 11% sport 22%
12. Of these sports programs shown regularly on T.V. which do you watch the most? Rank 1-9.
 1 = best
 9 = least
- 1st best hockey 83% baseball 5%
 basketball 2% golf 1%
 car racing 3% football 1%
 wrestling 3% tennis 1%
 bowling 1%
12. Of these sports programs shown regularly on T.V. which do you watch the most? Rank 1-9.
 1 = best
 9 = least
- 2nd best hockey 6% baseball 29%
 basketball 11% golf 7%
 car racing 20% football 13%
 wrestling 11% tennis 1%
 bowling 1%
13. Of these sports programs shown occasionally on T.V. which do you watch the most? Rank 1-9.
 1 = best
 9 = least
- 1st best gymnastics 6% soccer 13%
 track & field 18% swimming 12%
 boxing 28% skiing 11%
 horse racing 6% Synchro-
 volleyball 3% Swimming 3%
13. Of these sports programs shown occasionally on T.V. which do you watch the most? Rank 1-9.
 1 = best
 9 = least
- 2nd best gymnastics 7% soccer 10%
 track & field 21% swimming 19%
 boxing 18% skiing 11%
 horse racing 8% Synchro-
 volleyball 4% Swimming 2%

Lacrosse Results

N = 45

Identification Sport/Athletic
Participation (S/A-P) and TV Viewing (T/V)PLAYER QUESTIONNAIRE

1. Age _____ 2. Sex a) Male 3. Sport _____

 $\bar{x} = 14 \pm 4$ yrs, Median = 14 yrs b) FemaleMode = 14 yrs, range = 15 yrs, Min. = 5 yrs,
Max. = 20 yrs

4. Team Name _____

5. What do you like most about your sport? 1) Game itself = 25% 2) Aggression = 20%

3) Action - 20% 4) Rewards - 13% 5) Fun, enjoyment = 10% 6) Achievement = 5%

7) Winning = 5% 8) Skills = 3%

6. What do you like least about your sport? 1) Aggression = 25% 2) Not playing = 17%

3) Referees = 17% 4) Injuries = 11% 5) Equipment = 11% 6) Nothing = 8%

7) Losing = 6% 8) Coaching = 3% 9) Drills, Practices = 3%

7. Number of hours/wk that you watch T.V. during the summer _____

 $\bar{x} = 21 \pm 14$ hrs, Median = 14 hrs, Mode = 10 hrs, Range = 40 hrs, Min. = 10 hrs, Max. = 50 hrs

8. Time of day when you watch the most T.V. during the summer

morning 17%afternoon 14%evening 64%

9. Number of hours/wk that you watch T.V. during the winter _____

 $\bar{x} = 27 \pm 15$ hrs, Median = 24 hrs, Mode = 10 hrs, Range = 40 hrs, Min. = 10 hrs, Max. = 50 hrs

10. Time of day when you watch the most T.V. during the winter

morning 17%afternoon 10%evening 71%

11. What type of show do you like best? Rank 1-6

	mystery	<u>17%</u>	drama	<u>5%</u>
1st best	comedy	<u>17%</u>	cartoons	<u>15%</u>
	adventure	<u>5%</u>	sport	<u>42%</u>

1 = best
6 = least

11. What type of show do you like best? Rank 1-6

	mystery	<u>18%</u>	drama	<u>3%</u>
2nd best	comedy	<u>38%</u>	cartoons	<u>13%</u>
	adventure	<u>15%</u>	sport	<u>13%</u>

evening _____
1 = best
6 = least12. Of these sports programs shown regularly on T.V. which do you
watch the most? Rank 1-9.

	hockey	<u>48%</u>	baseball	<u>2%</u>
1st best	basketball	<u>7%</u>	golf	<u>2%</u>
	car racing	<u>7%</u>	football	<u>18%</u>
	wrestling	<u>9%</u>	tennis	<u>2%</u>
	bowling	<u>5%</u>		

1 = best
9 = least12. Of these sports programs shown regularly on T.V. which do you
watch the most? Rank 1-9.

	hockey	<u>18%</u>	baseball	<u>20%</u>
2nd best	basketball	<u>15%</u>	golf	<u>8%</u>
	car racing	<u>25%</u>	football	<u>8%</u>
	wrestling	<u>10%</u>	tennis	<u>5%</u>
	bowling	<u>5%</u>		

1 = best
9 = least13. Of these sports programs shown occasionally on T.V. which do you
watch the most? Rank 1-9.

	gymnastics	<u>23%</u>	soccer	<u>7%</u>
1st best	track & field	<u>14%</u>	swimming	<u>14%</u>
	boxing	<u>23%</u>	skiing	<u>11%</u>
	horse racing	<u>5%</u>	Synchro-	
	volleyball	<u>5%</u>	Swimming	<u>5%</u>

1 = best
9 = least13. Of these sports programs shown occasionally on T.V. which do you
watch the most? Rank 1-9.

	gymnastics	<u>7%</u>	soccer	<u>5%</u>
2nd best	track & field	<u>24%</u>	swimming	<u>12%</u>
	boxing	<u>24%</u>	skiing	<u>10%</u>
	horse racing	<u>7%</u>	Synchro-	
	volleyball	<u>7%</u>	Swimming	<u>2%</u>

1 = best
9 = least

Baseball Results - Boys
Identification Sport/Athletic
Participation (S/A-P) and TV Viewing (T/V)

PLAYER QUESTIONNAIRE

1. Age _____ 2. Sex a) Male 3. Sport _____

\bar{x} = 10 \pm 2 yrs, Median = 11 yrs b) Female

Mode = 8 yrs, Range = 6 yrs, Min. = 7 yrs,
Max. = 13 yrs

4. Team Name _____

5. What do you like most about your sport? 1) Skills = 65% 2) Game Itself = 21%
3) Winning = 7% 4) Action = 5% 5) Fun, enjoyment = 2%

6. What do you like least about your sport? 1) Not playing = 58% 2) Losing = 16%

3) Drills, practices = 12% 4) Nothing = 5% 5) Injuries = 2%

6) Aggression = 2% 7) Referees = 2% 8) Equipment = 2%

7. Number of hours/wk that you watch T.V. during the summer _____

\bar{x} = 22 \pm 13 hrs, Median = 19 hrs, Mode = 10 hrs, Range = 40 hrs, Min. = 10 hrs, Max. = 50 hrs

8. Time of day when you watch the most T.V. during the summer

morning 15%

afternoon 18%

evening 67%

9. Number of hours/wk that you watch T.V. during the winter _____

\bar{x} = 21 \pm 11 hrs, Median = 19 hrs, Mode = 10 hrs, Range = 40 hrs, Min. = 10 hrs, Max. = 50 hrs

10. Time of day when you watch the most T.V. during the winter

morning 15%

afternoon 26%

evening 59%

11. What type of show do you like best? Rank 1-6

	mystery	<u>13%</u>	drama	<u>3%</u>
1st best	comedy	<u>26%</u>	cartoons	<u>18%</u>
	adventure	<u>8%</u>	sport	<u>33%</u>

1 = best

6 = least

11. What type of show do you like best? Rank 1-6

	mystery	<u>19%</u>	drama	<u>7%</u>
2nd best	comedy	<u>10%</u>	cartoons	<u>32%</u>
	adventure	<u>13%</u>	sport	<u>19%</u>

evening

1 = best

6 = least

12. Of these sports programs shown regularly on T.V. which do you watch the most? Rank 1-9.

	hockey	<u>46%</u>	baseball	<u>26%</u>
1st best	basketball	<u>10%</u>	golf	<u>3%</u>
	car racing	<u> </u>	football	<u>5%</u>
	wrestling	<u> </u>	tennis	<u>3%</u>
	bowling	<u>8%</u>		

1 = best

9 = least

12. Of these sports programs shown regularly on T.V. which do you watch the most? Rank 1-9.

	hockey	<u>17%</u>	baseball	<u>36%</u>
2nd best	basketball	<u>11%</u>	golf	<u>3%</u>
	car racing	<u>22%</u>	football	<u> </u>
	wrestling	<u>3%</u>	tennis	<u>6%</u>
	bowling	<u>3%</u>		

1 = best

9 = least

13. Of these sports programs shown occasionally on T.V. which do you watch the most? Rank 1-9.

	gymnastics	<u>15%</u>	soccer	<u>10%</u>
1st best	track & field	<u>13%</u>	swimming	<u>21%</u>
	boxing	<u>21%</u>	skiing	<u>3%</u>
	horse racing	<u>10%</u>	Synchro-	
	volleyball	<u> </u>	Swimming	<u>8%</u>

1 = best

9 = least

13. Of these sports programs shown occasionally on T.V. which do you watch the most? Rank 1-9.

	gymnastics	<u>6%</u>	soccer	<u>9%</u>
2nd best	track & field	<u>27%</u>	swimming	<u>21%</u>
	boxing	<u>12%</u>	skiing	<u>6%</u>
	horse racing	<u>3%</u>	Synchro-	
	volleyball	<u>9%</u>	Swimming	<u>6%</u>

N = 14

Girls' Baseball Results
Identification Sport/Athletic
Participation (S/A-P) and TV Viewing (T/V)

PLAYER QUESTIONNAIRE

1. Age _____ 2. Sex a) Male 3. Sport _____
 \bar{x} = 11 \pm 2 yrs, Median = 12 years b) Female
Mode = 12 yrs, Range = 6 yrs, Min. = 7 yrs 4. Team Name _____
Max. = 13 yrs

5. What do you like most about your sport? 1) Winning = 29% 2) Game Itself = 21%
3) Fun, enjoyment = 21% 4) Skills = 14% 5) Action = 7% 6) Rewards = 7%

6. What do you like least about your sport? 1) Not playing = 46%
2) Losing = 23% 3) Drills, practices = 23% 4) Referees = 8%

7. Number of hours/wk that you watch T.V. during the summer _____
 \bar{x} = 20 \pm 16 hrs, Median = 13 hrs, Mode = 10 hrs, Range = 40 hrs, Min. = 10 hrs, Max. = 50 hrs

8. Time of day when you watch the most T.V. during the summer
morning 25%
afternoon 17%
evening 58%

9. Number of hours/wk that you watch T.V. during the winter _____
 \bar{x} = 13 \pm 3 hrs, Median = 12 hrs, Mode = 10 hrs, Range = 20 hrs, Min. = 10 hrs, Max. = 30 hrs

10. Time of day when you watch the most T.V. during the winter
morning 17%
afternoon 0%
evening 83%

11. What type of show do you like best? Rank 1-6
1 = best
6 = least

1st best	mystery	25%	drama	_____
	comedy	33%	cartoons	33%
	adventure	_____	sport	8%

evening _____

11. What type of show do you like best? Rank 1-6
1 = best
6 = least

2nd best	mystery	27%	drama	_____
	comedy	36%	cartoons	27%
	adventure	9%	sport	_____

12. Of these sports programs shown regularly on T.V. which do you watch the most? Rank 1-9.
1 = best
9 = least

1st best	hockey	25%	baseball	33%
	basketball	17%	golf	_____
	car racing	8%	football	_____
	wrestling	_____	tennis	_____
	bowling	17%		

12. Of these sports programs shown regularly on T.V. which do you watch the most? Rank 1-9.
1 = best
9 = least

2nd best	hockey	9%	baseball	18%
	basketball	9%	golf	9%
	car racing	36%	football	9%
	wrestling	_____	tennis	9%
	bowling	_____		

13. Of these sports programs shown occasionally on T.V. which do you watch the most? Rank 1-9.
1 = best
9 = least

1st best	gymnastics	42%	soccer	_____
	track & field	42%	swimming	_____
	boxing	_____	skiing	_____
	horse racing	8%	Synchro-	_____
	volleyball	8%	Swimming	_____

13. Of these sports programs shown occasionally on T.V. which do you watch the most? Rank 1-9.
1 = best
9 = least

2nd best	gymnastics	8%	soccer	8%
	track & field	25%	swimming	50%
	boxing	_____	skiing	_____
	horse racing	8%	Synchro-	_____
	volleyball	_____	Swimming	_____

Identification of Sport/Athletic Participation and TV Viewing

Question 1 (Q1). The age of the 259 respondents of the overall opinionnaire ranged from five through twenty with a mean of twelve, and a standard deviation of plus or minus five. The median age was twelve and the most frequently occurring age (or mode) was eleven.

Q2 The respondents for this opinionnaire were drawn from the St. Clair Hockey School, Windsor Minor Lacrosse and Windsor Sandwich East Little League Baseball for boys and girls. The low number of females is a reflection of the paucity of girls involved in youth sports in Southwestern Ontario.

Q3 Sports involved were hockey, lacrosse and baseball for boys and girls.

Q4 The team name was used in statistical analysis and, therefore, is not recorded here.

Q5 When the respondents were asked what do you 'like most' about your sport they ranked 'skill' first (22%), 'the game itself' second (17%), 'action' third (16%), 'reward' fourth (15%), 'fun and enjoyment' fifth (11%), 'aggression' sixth (9%), 'winning' seventh (6%), 'fitness' eighth (2%), and 'achievement' last (2%). It can be seen from the response that 'skill, the game itself, action reward, and fun and enjoyment', all exceed 'aggression, winning, fitness and achievement.' It would appear that the latter items, which are so highly valued by adults, are not at all significant to children and youth.

Q6 When the respondents were asked to indicate what they liked least about their sport 'not playing' ranked first (23%), 'aggression' ranked second (16%), 'drills and practice' ranked third (14%), 'losing' ranked fourth (13%), 'injuries' ranked fifth (12%), 'nothing' ranked sixth (9%), 'equipment' ranked seventh (6%), 'referees' ranked eighth (6%), and 'coaching' ranked ninth (2%). Again we see that the items which most adults criticise in youth sports rank far behind the concerns

of the players, which are 'not playing and excessive aggression'.

Q7 When asked the number of hours per week that the respondents watched TV during the summer, the average was 25 with a standard deviation of fourteen hours. There was quite a bit of diversity as the minimum was ten hours and the maximum fifty.

Q8 For the most part, the children and youth watched TV in the 'evening' (70%), with the 'morning' second (20%), and the 'afternoon' lowest (10%).

Q9 In terms of TV viewing habits during the 'winter' the average was approximately the same (26 hours). The viewing habits in terms of the time of the day also ranked the same, however, evening absorbed even a higher percentage of their viewing time (74%).

Q10 On this question, the respondents were asked to rank the types of shows that they 'liked first best and second best.' As can be seen, 'sport shows' ranked first (39%), followed quite a distance by 'comedy' (20%), and 'cartoons' (16%). In terms of their second priority, 'comedy' ranked first (29%), followed by 'cartoons' (23%), but 'sports' still absorbed a high percentage of their time (19%). In both rankings 'drama, adventure and mystery' ranked last.

Q.11 On question 12 respondents were asked to list their first priority and second priority' on sport shows shown regularly on T.V. As can be seen the overwhelming percentage ranked 'hockey' first (70%), with 'baseball' quite a distance second (9%). It could be argued that the majority of the respondents were in hockey and, therefore, biased towards this activity. Analysis of the subgroup charts, however, will show that lacrosse also ranks hockey number one (48%) as do boys baseball (46%). Girls baseball respondents ranked baseball first (33%) but even here hockey was a close second (25%). When it comes to number

one choice, nothing approaches 'hockey' even in comparison to the other major spectator sports: 'baseball' (9%), 'football' (5%), and 'basketball' (5%) found themselves in the range of 'bowling and car racing' (4%), 'wrestling' (3%), and 'golf and tennis' (2%).

In terms of a second choice 'car racing' ranked first (22%), followed by 'basketball' (12%), 'hockey and football' (10%), 'wrestling' (9%), 'baseball' (8%), 'golf' (5%), and 'bowling and tennis' (2%).

It should be pointed out that some of the opinionnaires were distributed and retrieved during the olympics and responses were undoubtedly influenced by this fact so that:

Q13 On question thirteen, the respondents were asked to rank the sport program shown occasionally on TV. The first choice ranking showed 'boxing first (24%), followed closely by 'track and field' (18%), 'swimming' (13%), 'gymnastics' (12%), 'soccer' (11%), 'skiing' (8%), 'horseracing' (7%), and 'synchronized swimming' (4%).

In terms of a second choice, of the sport program shown occasionally, 'track and field, swimming and boxing' still ranked first, second and third (23%, 20%, and 17%, respectively) followed by 'skiing' (10%), 'soccer' (9%), 'horse-racing and gymnastics' (7%), 'volleyball' (5%), and 'swimming' (3%).

Later in this report a number of these shows are coded on a semantic differential basis going from the least aggressive to the most aggressive and violent, and are crossed tabulated with the sports activities on the basis of least aggressive to most aggressive (baseball, lacrosse and hockey), providing an opportunity to identify significant associations.

Project Competition Concern

The overall response on the Professional Athletic-Amateur Sport Forced Choice opinionnaire showed seven response categories indicating amateur sport, i.e., an ultimate goal of 'participation and play' (63%), an 'emphasis on playing everyone equally' in terms of player selection (69%); rule application which favoured 'spirit of the rules and sportmanship' (75%); 'evaluation of league success on the basis of player improvement and number participating' (68%); decision making at the 'local level' (59%); with coordinated 'natural evolution' in terms of the 'growth rate of children' (68%); with the attitude that 'it doesn't matter if you win or lose, but how you play the game' (73%).

The six remaining items showed a preference for professional athletic identification terms such as a long range aim focusing on 'specialization of child's skill development' (57%); with the objective of 'work to win and aggression' (55%); with 'rewards for achievement in the form of banquets and trophies' (63%); commitment of time for 'practices and games in excess of six hours' (52%), scheduling emphasis focusing on 'regional and state competition' (51%) with the overall philosophy that 'a game worth playing is worth playing well' (60%).

The dominance of amateur sport responses over professional athletic responses far exceeds the absolute simple majority of seven over six. Analysis of the percentage of difference in agreement shows that in those instances where professional athletic responses were selected the sum of % of difference in agreement was (78%), as contrasted with the amateur sport responses where the sum of % of difference was 244%.

The person being interviewed is an ☐ executive, ☐ coach, ☐ official (referees, etc.)
☐ parent, ☐ sponsor ☐ player.

Please indicate your preference by checking (✓) one (1) choice only from either Column A or Column B for each of the items in Row #1 - 13. The choices are based on interviews with executives, coaches, officials and parents.

	Column A	Column B
1. ultimate goal	38.5% <input type="checkbox"/> win and/or excel or	61.5% <input type="checkbox"/> participate and play
2. aim (long-range)	43.0% <input type="checkbox"/> generalization-child's overall development	59% <input type="checkbox"/> specialization-child's skills development
3. objective (immediate)	55% <input type="checkbox"/> work, to win aggression	45% <input type="checkbox"/> partake for fun, relaxation
4. rewards	37% <input type="checkbox"/> playing is its own reward, no banquet and trophies	63% <input type="checkbox"/> achievement should be rewarded, banquets and trophies
5. commitment of time (practice and games per week)	48% <input type="checkbox"/> 5 hours or less	52% <input type="checkbox"/> 6 hours or more
6. emphasis in player selection	31% <input type="checkbox"/> play the best most often	69% <input type="checkbox"/> play everyone equally
7. rules-application	25% <input type="checkbox"/> letter of law (gamesmanship)	75% <input type="checkbox"/> spirit of rules (sportsmanship)
8. scheduling emphasis	49% <input type="checkbox"/> local and league competition	51% <input type="checkbox"/> region and state competition
9. evaluation of league success	32% <input type="checkbox"/> by standings and competitors' calibre	68% <input type="checkbox"/> on player improvement & numbers participating
10. decision-making level	41% <input type="checkbox"/> state/province or national	59% <input type="checkbox"/> local league
11. growth rate of child	32% <input type="checkbox"/> control and rapid development	68% <input type="checkbox"/> coordination and natural evolution
12. cliches	73% <input type="checkbox"/> It doesn't matter if you win or lose, but how you play the game.	27% <input type="checkbox"/> No excuse is adequate for losing. No cost is too high for winning.
13. philosophy	61% <input type="checkbox"/> A game worth playing is worth playing well.	39% <input type="checkbox"/> Any game worth playing is worth playing even if poorly.

Additional Comments: (Please use other side if necessary)

Professional Athletics (PA)

Amateur Sport (AS)

Q1	Amateur Sport [AS] = +23%
Q2 ...Professional Athletics [PA] = +14%	
Q3	[PA] = +10%
Q4	[PA] = +26%
Q5	[PA] = +4%
Q6	[AS] = +38%
Q7	[AS] = +50%
Q8	[PA] = +2%
Q9	[AS] = +36%
Q10	[AS] = +18%
Q11	[AS] = +36%
Q12	[AS] = +46%
Q13	[PA] = +22%

PA = 6 / +78%

<

AS = 7 / +247%

PA 6 < 7 AS = 169% AS

Project: Competition Concern

WHAT DO WE DO NOW!!

The person being interviewed is an ☐ executive, ☐ coach, ☐ official (referees, etc.)
☐ parent, ☐ sponsor ☐ player.

Please indicate your preference by checking **(X)** one (1) choice only from either Column A or Column B for each of the items in Row #1 - 13. The choices are based on interviews with executives, coaches, officials and parents.

Column A

Column B

- | | | |
|---|---|---|
| 1. ultimate goal | 38% <input type="checkbox"/> win and/or excel or | 62% <input type="checkbox"/> participate and play |
| 2. aim (long-range) | 45% <input type="checkbox"/> generalization-child's overall development | 55% <input type="checkbox"/> specialization-child's skills development |
| 3. objective (immediate) | 64% <input type="checkbox"/> work, to win aggression | 36% <input type="checkbox"/> partake for fun, relaxation |
| 4. rewards | 38% <input type="checkbox"/> playing is its own reward, no banquet and trophies | 62% <input type="checkbox"/> achievement should be rewarded, banquets and trophies |
| 5. commitment of time (practice and games per week) | 40% <input type="checkbox"/> 5 hours or less | 60% <input type="checkbox"/> 6 hours or more |
| 6. emphasis in player selection | 31% <input type="checkbox"/> play the best most often | 69% <input type="checkbox"/> play everyone equally |
| 7. rules-application | 24% <input type="checkbox"/> letter of law (gamesmanship) | 76% <input type="checkbox"/> spirit of rules (sportsmanship) |
| 8. scheduling emphasis | 45% <input type="checkbox"/> local and league competition | 55% <input type="checkbox"/> region and state competition |
| 9. evaluation of league success | 35% <input type="checkbox"/> by standings and competitors' calibre | 65% <input type="checkbox"/> on player improvement & numbers participating |
| 10. decision-making level | 47% <input type="checkbox"/> state/province or national | 53% <input type="checkbox"/> local league |
| 11. growth rate of child | 34% <input type="checkbox"/> control and rapid development | 66% <input type="checkbox"/> coordination and natural evolution |
| 12. cliches | 78% <input type="checkbox"/> It doesn't matter if you win or lose, but how you play the game. | 22% <input type="checkbox"/> No excuse is adequate for losing. No cost is too high for winning. |
| 13. philosophy | 65% <input type="checkbox"/> A game worth playing is worth playing well. | 35% <input type="checkbox"/> Any game worth playing is worth playing even if poorly. |

Additional Comments: (Please use other side if necessary)

Professional Athletics (PA)

Amateur Sport (AS)

Q1	Amateur Sport (AS) = +24%
Q2 Professional Athletics (PA) = +10%	
Q3 (PA) = +28%	
Q4 (PA) = +26%	
Q5 (PA) = +20%	
Q6 (AS) = +38%	
Q7 (AS) = +52%	
Q8 (PA) = +10%	
Q9 (AS) = +20%	
Q10 (AS) = +6%	
Q11 (AS) = +32%	
Q12 (AS) = +56%	
Q13 (PA) = +31%	

PA = 6 / +125% < AS = 7 / +228%

PA 6 < 7 AS = + 103% AS

Project: Competition Concern

WHAT DO WE DO NOW!!

The person being interviewed is an ☐ executive, ☐ coach, ☐ official (referees, etc.)
☐ parent, ☐ sponsor ☐ player.

Please indicate your preference by checking (✓) one (1) choice only from either
 Column A or Column B for each of the items in Row #1 - 13. The choices are based
 on interviews with executives, coaches, officials and parents

	Column A	Column B
1. ultimate goal	40% <input type="checkbox"/> win and/or excel or	58% <input type="checkbox"/> participate and play
2. aim (long-range)	34% <input type="checkbox"/> generalization-child's overall development	66% <input type="checkbox"/> specialization-child's skills development
3. objective (immediate)	56% <input type="checkbox"/> work, to win aggression	44% <input type="checkbox"/> partake for fun, relaxation
4. rewards	43% <input type="checkbox"/> playing is its own reward, no banquet and trophies	57% <input type="checkbox"/> achievement should be rewarded, banquets and trophies
5. commitment of time (practice and games per week)	67% <input type="checkbox"/> 5 hours or less	33% <input type="checkbox"/> 6 hours or more
6. emphasis in player selection	27% <input type="checkbox"/> play the best most often	73% <input type="checkbox"/> play everyone equally
7. rules-application	39% <input type="checkbox"/> letter of law (gamesmanship)	61% <input type="checkbox"/> spirit of rules (sportsmanship)
8. scheduling emphasis	50% <input type="checkbox"/> local and league competition	50% <input type="checkbox"/> region and state competition
9. evaluation of league success	36% <input type="checkbox"/> by standings and competitors' calibre	64% <input type="checkbox"/> on player improvement & numbers participating
10. decision-making level	44% <input type="checkbox"/> state/province or national	56% <input type="checkbox"/> local league
11. growth rate of child	33% <input type="checkbox"/> control and rapid development	67% <input type="checkbox"/> coordination and natural evolution
12. cliches	66% <input type="checkbox"/> It doesn't matter if you win or lose, but how you play the game.	34% <input type="checkbox"/> No excuse is adequate for losing. No cost is too high for winning.
13. philosophy	59% <input type="checkbox"/> A game worth playing is worth playing well.	41% <input type="checkbox"/> Any game worth playing is worth playing even if poorly.

Additional Comments: (Please use other side if necessary)

	Professional Athletics (PA)	Amateur Sport (AS)
Q1	Amateur Sport (AS) =	+18%
Q2Professional Athletics (PA) =	+32%	
Q3(PA) =	+12%	
Q4(PA) =	+14%	
Q5	(AS) =	+34%
Q6	(AS) =	+46%
Q7	(AS) =	+22%
Q8(PA) =	--	(AS) = --
Q9	(AS) =	+28%
Q10	(AS) =	+12%
Q11	(AS) =	+34%
Q12	(AS) =	+32%
Q13(PA) =	+21%	

PA = 4 / +79%

AS = 7 / +226%

PA 4 < 7 AS = + 147% AS

Project: Competition Concern

WHAT DO WE DO NOW?!

The person being interviewed is an ☐ executive, ☐ coach, ☐ official (referees, etc.)
☐ parent, ☐ sponsor ☐ player.

Please indicate your preference by checking (✓) one (1) choice only from either Column A or Column B for each of the items in Row #1 - 13. The choices are based on interviews with executives, coaches, officials and parents.

Column A

Column B

- | | | |
|---|---|---|
| 1. ultimate goal | 28% <input type="checkbox"/> win and/or excel or | 62% <input type="checkbox"/> participate and play |
| 2. aim (long-range) | 45% <input type="checkbox"/> generalization-child's overall development | 55% <input type="checkbox"/> specialization-child's skills development |
| 3. objective (immediate) | 37% <input type="checkbox"/> work, to win aggression | 63% <input type="checkbox"/> partake for fun, relaxation |
| 4. rewards | 35% <input type="checkbox"/> playing is its own reward, no banquet and trophies | 65% <input type="checkbox"/> achievement should be rewarded, banquets and trophies |
| 5. commitment of time (practice and games per week) | 59% <input type="checkbox"/> 5 hours or less | 41% <input type="checkbox"/> 6 hours or more |
| 6. emphasis in player selection | 36% <input type="checkbox"/> play the best most often | 64% <input type="checkbox"/> play everyone equally |
| 7. rules-application | 21% <input type="checkbox"/> letter of law (gamesmanship) | 79% <input type="checkbox"/> spirit of rules (sportsmanship) |
| 8. scheduling emphasis | 50% <input type="checkbox"/> local and league competition | 50% <input type="checkbox"/> region and state competition |
| 9. evaluation of league success | 25% <input type="checkbox"/> by standings and competitors' calibre | 75% <input type="checkbox"/> on player improvement & numbers participating |
| 10. decision-making level | 23% <input type="checkbox"/> state/province or national | 77% <input type="checkbox"/> local league |
| 11. growth rate of child | 23% <input type="checkbox"/> control and rapid development | 77% <input type="checkbox"/> coordination and natural evolution |
| 12. cliches | 59% <input type="checkbox"/> It doesn't matter if you win or lose, but how you play the game. | 41% <input type="checkbox"/> No excuse is adequate for losing. No cost is too high for winning. |
| 13. philosophy | 45% <input type="checkbox"/> A game worth playing is worth playing well. | 55% <input type="checkbox"/> Any game worth playing is worth playing even if poorly. |

Additional Comments: (Please use other side if necessary)

Professional Athletics (PA)

Amateur Sport (AS)

Q1.....	Amateur Sport (AS) =	+24%
Q2.....	Professional Athletics (PA) =	+10%
Q3.....	(AS) =	+26%
Q4.....	(PA) =	+30%
Q5.....	(AS) =	+18%
Q6.....	(AS) =	+28%
Q7.....	(AS) =	+58%
Q8.....	(PA) =	--
Q9.....	(AS) =	+50%
Q10.....	(AS) =	+54%
Q11.....	(AS) =	+54%
Q12.....	(AS) =	+18%
Q13.....	(AS) =	+10%

$$PA = 2 / +40\% \quad < \quad AS = 10 / +340\%$$

$$PA 2 < 10 AS = + 300\% AS$$

Project: Competition Concern

WHAT DO WE DO NOW?!

The person being interviewed is an ☐ executive, ☐ coach, ☐ official (referees, etc.)
☐ parent, ☐ sponsor ☐ player.

Please indicate your preference by checking (✓) one (1) choice only from either Column A or Column B for each of the items in Row #1 - 13. The choices are based on interviews with executives, coaches, officials and parents.

	Column A	Column B
1. ultimate goal	7% <input type="checkbox"/> win and/or excel or	93% <input type="checkbox"/> participate and play
2. aim (long-range)	38.5% <input type="checkbox"/> generalization-child's overall development	61.5% <input type="checkbox"/> specialization-child's skills development
3. objective (immediate)	7% <input type="checkbox"/> work, to win aggression	93% <input type="checkbox"/> partake for fun, relaxation
4. rewards	7% <input type="checkbox"/> playing is its own reward, no banquet and trophies	93% <input type="checkbox"/> achievement should be rewarded, banquets and trophies
5. commitment of time (practice and games per week)	36% <input type="checkbox"/> 5 hours or less	64% <input type="checkbox"/> 6 hours or more
6. emphasis in player selection	21% <input type="checkbox"/> play the best most often	79% <input type="checkbox"/> play everyone equally
7. rules-application	8% <input type="checkbox"/> letter of law (gamesmanship)	92% <input type="checkbox"/> spirit of rules (sportsmanship)
8. scheduling emphasis	85% <input type="checkbox"/> local and league competition	15% <input type="checkbox"/> region and state competition
9. evaluation of league success	9% <input type="checkbox"/> by standings and competitors' calibre	91% <input type="checkbox"/> on player improvement & numbers participating
10. decision-making level	15% <input type="checkbox"/> state/province or national	85% <input type="checkbox"/> local league
11. growth rate of child	31% <input type="checkbox"/> control and rapid development	69% <input type="checkbox"/> coordination and natural evolution
12. cliches	85% <input type="checkbox"/> It doesn't matter if you win or lose, but how you play the game.	15% <input type="checkbox"/> No excuse is adequate for losing. No cost is too high for winning.
13. philosophy	58% <input type="checkbox"/> A game worth playing is worth playing well.	42% <input type="checkbox"/> Any game worth playing is worth playing even if poorly.

Additional Comments: (Please use other side if necessary)

	Professional Athletics (PA)	Amateur Sport (AS)
Q1	Amateur Sport (AS) = +86%	
Q2Professional Athletics (PA) = +23%		
Q3	(AS) = +86%	
Q4	(PA) = +86%	
Q5	(PA) = +28%	
Q6	(AS) = +58%	
Q7	(AS) = +84%	
Q8	(AS) = +70%	
Q9	(AS) = +82%	
Q10	(AS) = +70%	
Q11	(AS) = +38%	
Q12	(AS) = +70%	
Q13	(PA) = +16%	

$$PA = 4 / +153\% \quad < \quad AS = 9 / +644\%$$

$$PA 4 < 9 AS = + 491\% AS$$
















TV Viewing Diary - Habits and Feelings

The third section of the opinionnaire records the overall clustered results of the listing of a sample of TV shows which were checked off by the respondents, and then rated by the respondents on the frequency with which they were watched, motivation for viewing, feelings following the show, as well as parental attitudes and behavior in response to the child or youth watching the show. The data for this particular section was collected by a stratified random sample which assured that all subjects were provided with TV schedules for all days of the week and all periods of the day. The respondents checked off the shows which they watch and then recorded each show and responded to each question in terms of that show. In a modified form, this provided a diary by which the respondents could indicate which shows they had watched the previous day.

The various shows listed were subsequently ranked by a panel of experts (children in the age range of the subjects) on a semantic scale running from very non-aggressive, to non-aggressive, to neutral, to aggressive, to very aggressive.

It will be noted that at the bottom of the TV diary and behavior, the reader will find specific statistics resulting from a clustering of the subjects' responses. The mean number of hours recorded was six per day with a standard deviation of + or - four. The median and mode were five and four hours respectively, with rather a large running from zero hours to twenty-four hours.

In terms of the overall response, it is interesting to note that, although fifty percent of the shows fell into the very non-aggressive (19%) or non-aggressive range (31%), there was a total

PROGRAM	I WATCH THIS SHOW	I WATCH THIS SHOW BECAUSE	WHEN THIS SHOW COMES ON MY PARENTS...	AFTER WATCHING THIS SHOW I FEEL....
Very Non-Aggressive 19%	a) Always 35% b) Sometimes 65%	a) it's funny 48% b) of the action 15% c) of the mystery 8% d) it's interesting 22% e) of the acting 6%	a) like it 61% b) don't like it 16% c) don't care 23% a) watch it 54% b) don't watch it 46%	 61%  31%  8%
Non-Aggressive 31%	a) Always 38% b) Sometimes 62%	a) it's funny 62% b) of the action 16% c) of the mystery 4% d) it's interesting 14% e) of the acting 4%	a) like it 65% b) don't like it 16% c) don't care 25% a) watch it 62% b) don't watch it 38%	 67%  27%  6%
Neutral 16%	a) Always 36% b) Sometimes 64%	a) it's funny 44% b) of the action 17% c) of the mystery 10% d) it's interesting 23% e) of the acting 6%	a) like it 56% b) don't like it 10% c) don't care 34% a) watch it 60% b) don't watch it 40%	 60%  28%  12%
Aggressive 23%	a) Always 40% b) Sometimes 60%	a) it's funny 53% b) of the action 23% c) of the mystery 8% d) it's interesting 12% e) of the acting 4%	a) like it 58% b) don't like it 12% c) don't care 30% a) watch it 55% b) don't watch it 45%	 65%  28%  6%
Very Aggressive 10%	a) Always 51% b) Sometimes 49%	a) it's funny 37% b) of the action 37% c) of the mystery 13% d) it's interesting 17% e) of the acting 2%	a) like it 63% b) don't like it 9% c) don't care 28% a) watch it 54% b) don't watch it 46%	 68%  30%  2%
















HOURS

Mean = 6 hrs, Median = 5 hours, Mode = 4 hrs
Range = 42 hrs, Min. = 0 hours, Max. = 4 hrs
Standard Deviation = 4 hours

TV 001



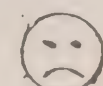











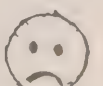
Very Non-Aggressive = 18%
Non-Aggressive = 34%
Neutral = 16%
Aggressive = 25%
Very Aggressive = 8%

Key Results TV Viewing Diary Child/Youth & Parents Habits & Feelings

PROGRAM	I WATCH THIS SHOW	I WATCH THIS SHOW BECAUSE	WHEN THIS SHOW COMES ON MY PARENTS...	AFTER WATCHING THIS SHOW I FEEL....
Very Non-Aggressive 14%	a)Always 33% b)Sometimes 67%	a)it's funny 47% b)of the action 17% c)of the mystery 25% d)it's interesting 23% e)of the acting 8%	a)like it 59% b)don't like it 22% c)don't care 29% a)watch it 55% b)don't watch it 45%	 60%  36%  4%
Non-Aggressive 33%	a)Always 36% b)Sometimes 64%	a)it's funny 61% b)of the action 21% c)of the mystery 2% d)it's interesting 12% e)of the acting 4%	a)like it 67% b)don't like it 7% c)don't care 26% a)watch it 57% b)don't watch it 43%	 70%  27%  3%
Neutral 10%	a)Always 40% b)Sometimes 60%	a)it's funny 66% b)of the action 13% c)of the mystery 7% d)it's interesting 13% e)of the acting 1%	a)like it 54% b)don't like it 10% c)don't care 36% a)watch it 63% b)don't watch it 37%	 69%  27%  4%
Aggressive 31%	a)Always 38% b)Sometimes 62%	a)it's funny 54% b)of the action 23% c)of the mystery 6% d)it's interesting 13% e)of the acting 4%	a)like it 60% b)don't like it 17% c)don't care 29% a)watch it 51% b)don't watch it 49%	 67%  29%  4%
Very Aggressive 12%	a)Always 46% b)Sometimes 54%	a)it's funny 34% b)of the action 37% c)of the mystery 15% d)it's interesting 12% e)of the acting 3%	a)like it 60% b)don't like it 8% c)don't care 32% a)watch it 54% b)don't watch it 46%	 64%  33%  3%

HOURS $\bar{x} = 5 \pm 4$ hrs, Median = 4 hrs, Mode = 3 hrs
Range = 42 hrs, Min. = 0 hrs, Max. = 42 hrs

TV 001 Very Non-Aggressive = 10%
Non-Aggressive = 38%
Neutral = 9%
Aggressive = 36%
Very Aggressive = 6%

PROGRAM	I WATCH THIS SHOW	I WATCH THIS SHOW BECAUSE	WHEN THIS SHOW COMES ON MY PARENTS...	AFTER WATCHING THIS SHOW I FEEL....
Very Non- Aggressive 13%	a) Always 34% b) Sometimes 66%	a) it's funny 30% b) of the action 19% c) of the mystery 15% d) it's interesting 36% e) of the acting 0%	a) like it 60% b) don't like it 3% c) don't care 27% a) watch it 45% b) don't watch it 55%	 43%  43%  14%
Non- Aggressive 32%	a) Always 31% b) Sometimes 69%	a) it's funny 66% b) of the action 6% c) of the mystery 8% d) it's interesting 19% e) of the acting 1%	a) like it 59% b) don't like it 9% c) don't care 32% a) watch it 68% b) don't watch it 32%	 64%  19%  17%
Neutral 35%	a) Always 31% b) Sometimes 69%	a) it's funny 36% b) of the action 13% c) of the mystery 11% d) it's interesting 30% e) of the acting 10%	a) like it 51% b) don't like it 6% c) don't care 43% a) watch it 53% b) don't watch it 47%	 42%  28%  30%
Aggressive 11%	a) Always 46% b) Sometimes 54%	a) it's funny 48% b) of the action 13% c) of the mystery 23% d) it's interesting 6% e) of the acting 10%	a) like it 52% b) don't like it 4% c) don't care 44% a) watch it 67% b) don't watch it 33%	 45%  26%  29%
Very Aggressive 9%	a) Always 63% b) Sometimes 37%	a) it's funny 40% b) of the action 36% c) of the mystery 8% d) it's interesting 16% e) of the acting 0%	a) like it 75% b) don't like it 4% c) don't care 21% a) watch it 57% b) don't watch it 43%	 63%  37%  0%

HOURS $\bar{x} = 5 \pm 4$ hrs, Median = 4 hrs, Mode = 0 hrs

Range = 12 hrs, Min. = 0 hrs, Max. = 12 hrs

TV 001
















Very Non-Aggressive = 16%

Non-Aggressive = 37%

Neutral = 34%
















Aggressive = 5%

Very Aggressive = 8%

PROGRAM	I WATCH THIS SHOW	I WATCH THIS SHOW BECAUSE	WHEN THIS SHOW COMES ON MY PARENTS...	AFTER WATCHING THIS SHOW I FEEL....
Very Non-Aggressive 31%	a)Always 32% b)Sometimes 68%	a)it's funny 53% b)of the action 15% c)of the mystery 8% d)it's interesting 16% e)of the acting 8%	a)like it 66% b)don't like it 21% c)don't care 17% a)watch it 58% b)don't watch it 42%	 70%  17%  13%
Non-Aggressive 25%	a)Always 51% b)Sometimes 49%	a)it's funny 63% b)of the action 15% c)of the mystery 5% d)it's interesting 14% e)of the acting 3%	a)like it 69% b)don't like it 17% c)don't care 13% a)watch it 68% b)don't watch it 32%	 63%  30%  7%
Neutral 20%	a)Always 40% b)Sometimes 60%	a)it's funny 27% b)of the action 26% c)of the mystery 12% d)it's interesting 24% e)of the acting 11%	a)like it 61% b)don't like it 16% c)don't care 23% a)watch it 62% b)don't watch it 38%	 68%  28%  4%
Aggressive 14%	a)Always 42% b)Sometimes 58%	a)it's funny 54% b)of the action 26% c)of the mystery 8% d)it's interesting 10% e)of the acting 2%	a)like it 50% b)don't like it 14% c)don't care 26% a)watch it 56% b)don't watch it 44%	 66%  30%  4%
Very Aggressive 10%	a)Always 49% b)Sometimes 51%	a)it's funny 39% b)of the action 43% c)of the mystery 9% d)it's interesting 9% e)of the acting 0%	a)like it 68% b)don't like it 15% c)don't care 17% a)watch it 50% b)don't watch it 50%	 81%  15%  4%

HOURS $\bar{x} = 7 \frac{1}{2}$ hrs, Median = 7 hrs, Mode = 6 hrs
Range = 14 hrs, Min. = 0 hrs, Max. = 14 hrs

TV 001 Very Non-Aggressive = 37%
Non-Aggressive = 18%
Neutral = 26%
Aggressive = 5%
Very Aggressive = 13%


PROGRAM	I WATCH THIS SHOW	I WATCH THIS SHOW BECAUSE	WHEN THIS SHOW COMES ON MY PARENTS...	AFTER WATCHING THIS SHOW I FEEL....
Very Non-Aggressive 33%	a) Always 44% b) Sometimes 56%	a) it's funny 53% b) of the action 6% c) of the mystery 13% d) it's interesting 26% e) of the acting 2%	a) like it 55% b) don't like it 14% c) don't care 31% a) watch it 51% b) don't watch it 49%	 55%  43%  2%
Non-Aggressive 28%	a) Always 42% b) Sometimes 58%	a) it's funny 56% b) of the action 9% c) of the mystery 16% d) it's interesting 16% e) of the acting 2%	a) like it 56% b) don't like it 16% c) don't care 28% a) watch it 68% b) don't watch it 32%	 63%  34%  3%
Neutral 13%	a) Always 37% b) Sometimes 63%	a) it's funny 32% b) of the action 32% c) of the mystery 4% d) it's interesting 32% e) of the acting 0%	a) like it 68% b) don't like it 0% c) don't care 32% a) watch it 67% b) don't watch it 33%	 66%  34%  0%
Aggressive 15%	a) Always 62% b) Sometimes 38%	a) it's funny 38% b) of the action 29% c) of the mystery 19% d) it's interesting 14% e) of the acting 0%	a) like it 70% b) don't like it 5% c) don't care 25% a) watch it 73% b) don't watch it 27%	 66%  34%  0%
Very Aggressive 11%	a) Always 75% b) Sometimes 25%	a) it's funny 50% b) of the action 31% c) of the mystery 13% d) it's interesting 6% e) of the acting 0%	a) like it 50% b) don't like it 6% c) don't care 44% a) watch it 58% b) don't watch it 42%	 71%  29%  0%



HOURS

$\bar{x} = 8 \frac{1}{2}$ hrs, Median = 9 hrs, Mode = 9 hrs
Range = 13 hrs, Min. = 2 hrs, Max. = 15 hrs

TV 001

Very Non-Aggressive = 43%
Non-Aggressive = 21%
Neutral = 14%
Aggressive = 14%
Very Aggressive = 7%

of 23% which fell into the aggressive range, and (10%) which fell into the very aggressive range. Of the very aggressive shows the respondents indicated that the majority 'always watched the show' (51%), and that they watched them because they were 'funny and had action' (37% each) and further 'felt happy'  (68%) after the show. It is also very revealing that 63% of their parents 'liked it' and that 54% 'watched the show' with them.

When we contrast the very aggressive incidences with the very non-aggressive, we find that the subjects only watched the show 'sometime' (65% greater than 35%) and that they found them 'funny' (48%) and 'interesting' (22%). Although 61% felt happy afterwards  , 8% felt sad  (contrasted with only 2% of those who watch very aggressive shows). In terms of very non-aggressive shows (61%) of the parents 'liked it' and similarly (54%) 'watched the show' with their children.

The remainder of the subgroup summaries (hockey, lacrosse, and baseball for boys and girls) can be read in a similar manner. Comparison of the identification data in terms of viewing habits and liking; preference on the Professional Athletic-Amateur Sport dichotomy; and of the TV Viewing diet in terms of habit, motivation and feelings of both the players and parents, lead the researchers to the conclusion that they were dealing with two rather distinct populations: namely, those who are involved in hockey and lacrosse, as opposed to those who are involved in baseball for both boys and girls. Further, the predisposition to (1) both participate in and view aggressive athletics, (2) with a preference for a high level of competition in the professional athletic model, (3) with a very high correlation between the aggressiveness and violence associated

with the sport selected, and (4) their propensity to view aggressive or very aggressive TV, might lead one to believe that those involved in hockey and lacrosse are aggressive not because of their involvement in hockey or lacrosse or viewing of aggressive or very aggressive TV, but rather that those involved in hockey and lacrosse score high on the TV aggression viewing index, because they are by nature aggressors.

Cross-Tabulation of Written Opinionnaire

In order to determine the association between the various sports, running from the least aggressive to the most aggressive (baseball, lacrosse and hockey), in terms of the rules of the game and reality of the activity and the various items on the written opinionnaire, cross-tabulation was conducted with the various items which had been listed or identified rearranged to provide a semantic differential. For example, on question number five, the 9 motivating forces which were identified by the subjects have been rearranged with 1 = fun and enjoyment, 2 = the game itself, 3 = action, 4 = fitness, 5 = skills, 6 = achievement, 7 = aggression, 8 = winning, and 9 = rewards. The sports, on the other hand, have been arranged with baseball = 1/least aggression, lacrosse = 2/medium aggression, and hockey = 3/most aggression. In view of the low N (number) for girl's base this sample was not considered in cross-tabulation - although it is recorded at the bottom of the chart. Significance levels for chi-square tests of association have been recorded in the charts which follow and the Kendall Tau B (a non-parametric correlation) has also been indicated (see below each cross-tabulation for the p and r).

Q5 'What do you like most about your sport?'

In response to this question we can see from Q5 cross-tabulation variable 4 vs. variable 9 - sport vs. most that there is a significant χ^2

CROSSTABULATIONS

1. V4 vs. V9

Question 5 = What do you like most about your sport?

SPORT vs. MOST

SPORT	Fun & Enjoyment	Game Itself	Action	Fitness	Skills	Achievement	Aggression	Winning	Remarks
1. Baseball	2%	21%	5%	0%	65%	0%	0%	7%	0%
2. Lacrosse	10%	25%	20%	0%	3%	5%	20%	5%	13%
3. Hockey	12%	13%	19%	4%	16%	2%	9%	5%	21%
4. Girls Baseball	21%	21%	7%	0%	14%	0%	0%	29%	7%

$$p < .0000$$

$$r = +.0252$$

2. V4 vs. V10

Question 6 = What do you like least about your sport?

SPORT vs. LEAST

SPORT	Nothing	Not Playing	Coaching	Referees	Equipment	Drills & Practice	Injuries	Losing	Aggression
1. Baseball	5%	58%	0%	2%	2%	12%	2%	16%	2%
2. Lacrosse	8%	17%	3%	17%	11%	3%	11%	7%	25%
3. Hockey	13%	11%	2%	4%	6%	16%	16%	13%	19%
4. Girls Baseball	0%	46%	0%	8%	0%	23%	0%	23%	0%

$$P < .0000$$

$$r = +.12827$$

association and that this relationship is positive: i.e., the more aggressive the sport the more children/youth involved value pro-athletic oriented values such as 'aggression, winning and rewards,' as opposed to amateur sport values.

Q6 'What do you like least about your sport?'

Similarly, the respondents showed a high correlation and significant association between their sport and things which they 'liked least' about their sport. For example, those involved in the most aggressive sports like lacrosse and hockey ranked such items as 'injury, losing and aggression' very high among their concern, while those involved in baseball, ranked these items relatively low. (Perhaps due to the fact that the chance of injury and aggression is much lower here). The baseball players were most concerned about 'not playing' (58%) and; indeed, it might be pointed out that all children and youth were relatively concerned about this item. .

Q7 'Number of hours/week that you watched TV during the summer?'

While this particular cross-tabulation did not reach the significant level identified ($p < .12$) it is worthy of recording since the Kendall Tau B of $+.10$ shows a constant trend wherein the less aggressive the sport, the lower the summer TV hours, i.e., baseball players are very low or low in their TV viewing habits, while those involved in lacrosse and hockey were relatively high.

Q9 Number of hours that you watch TV during the winter showed a similar trend and was significant, ($p < .02$).

Q11.1 and 11.2 'What type of show did you like best?' (first choice and second choice).

3. V4 vs. V11

Question 7 = Number of hours/week that you watch TV during the summer.

Summer TV

SPORT	Very Low	Low	Medium	High	Very High
1. Baseball	41%	21%	19%	12%	7%
2. Lacrosse	54%	10%	17%	10%	10%
3. Hockey	27%	18%	30%	12%	12%
4. Girls Baseball	67%	0%	11%	11%	11%

Key Very Low = 10 or less
 Low = 11 - 20
 Medium = 21 - 30
 High = 31 - 40
 Very High = 41 - 50

 $p < .1276$ $r = +.10041$

4. V4 vs. V12

Question 8 = Time of the day you watch TV during the summer.

SPORT vs. TIME 1

SPORT	Nothing	Morning	After-noon	Evening
1. Baseball	0%	15%	18%	67%
2. Lacrosse	5%	17%	14%	64%
3. Hockey	0%	22%	7%	71%
4. Girls Baseball	0%	25%	17%	58%

 $p < .058$ $r = +.010$

5. V4 vs. V13

Question 9 = Number of hours that you watch TV during the winter.

WINTER TV

SPORT	Very Low	Low	Medium	High	Very High
1. Baseball	38%	32%	18%	9%	3%
2. Lacrosse	29%	23%	17%	9%	23%
3. Hockey	22%	22%	25%	14%	18%
4. Girls Baseball	56%	0%	14%	0%	0%

 $p < .0275$ $r = +.07366$

CROSSTABLATIONS cont'd

6. V4 vs. V14

Question 10 = Time of the day you watch TV during the winter.

SPORT vs. TIME 2

SPORT	Morning	After-noon	Evening	Nothing
1. Baseball	15%	26%	59%	0%
2. Lacrosse	17%	10%	71%	2%
3. Hockey	13%	9%	78%	0%
4. Girls Baseball	17%	0%	83%	0%

Key Very Low = 10 or less $p < .069$
 Low = 11 - 20 $r = +.112$
 Medium = 21 - 30
 High = 31 - 40
 Very High = 41 - 50

7. V4 vs. V15

Question 11.1 = 1st choice - What type of show do you like best?

SPORT vs. SHOW 1

SPORT	Mystery	Comedy	Adventure	Drama	Cartoons	Sports
1. Baseball	13%	26%	8%	3%	16%	33%
2. Lacrosse	17%	17%	5%	5%	15%	42%
3. Hockey	7%	18%	5%	7%	17%	46%
4. Girls Baseball	25%	33%	0%	0%	33%	8%

1st BEST

$p < .272$
 $r = +.034$

8. V4 vs. V16

Question 11.2 - 2nd choice - What type of show do you like best?

SPORT vs. SHOW 2

SPORT	Mystery	Comedy	Adventure	Drama	Cartoons	Sports
1. Baseball	19%	10%	13%	7%	32%	19%
2. Lacrosse	18%	38%	15%	3%	13%	13%
3. Hockey	9%	31%	11%	4%	23%	22%
4. Girls Baseball	27%	36%	9%	0%	27%	0%

2nd BEST

$p < .180$
 $r = +.0006$

Although no significant difference or association was identified on this question, it should be pointed out that sports TV shows ranked highest on first choice and second choice ('hockey' 46%/22%, 'lacrosse' 42%/13%, and 'baseball' 33%/19%). 'Comedy and cartoons', in general, ranked second and third, while 'mystery, adventure and drama' are as one respondent indicated 'the pits'.⁵ It is interesting to note that the girls involved in baseball had a far different perspective ranking 'sport' very low (8%/0%) with 'comedy, mystery and cartoons' highest (33%/36%, 33%/27%, 25%/27% respectively).

Q12.1 and 12.2 'Of the sports programs shown regularly on TV which do you watch most (first choice and second choice).'

There is a significant relationship found between sports participation and first choice sport shows (probability less than .00 and $r = +.19$). There is a strong tendency for those involved in the most aggressive and violent sport activities to prefer the most aggressive and violent TV shows. Again note the discrepancy between girls involved in baseball TV viewing preference, and boys involved in hockey and lacrosse. We find that the girls' first choice was 'baseball' (33% compared with 5% and 2% for hockey and lacrosse) and their second choices were 'bowling and basketball' (17% greater than hockey 1% and 2%, and lacrosse 5% and 7%). On the other hand, the viewing habits of boys involved in Little League baseball show some resemblance to those of the girls ('baseball' 26%, 'basketball' 10% and 'bowling' 8%).

Q13.1 and 13.2 'Of the sports programs shown occasionally on TV which do you watch most (first and second choice).'

In terms of viewing habits of "occasional" sports shows, first choice again showed a significant association ($p < .007$) and a positive

CROSSTABULATIONS cont'd

9. V4 vs. V17

Question 12.1 = 1st choice - Of these sport programs shown regularly on TV
which do you watch most?

1st CHOICE - SPORT A - REGULAR SHOWS

SPORT	Golf	Tennis	Bowling	Baseball	Basket- ball	Car Racing	Football	Wrest- ling	Hockey
1. Baseball	3%	3%	8%	26%	10%	0%	5%	0%	46%
2. Lacrosse	2%	2%	5%	2%	7%	17%	18%	9%	48%
3. Hockey	1%	1%	1%	5%	2%	3%	1%	3%	83%
4. Girls Baseball	0%	0%	17%	33%	17%	8%	0%	0%	25%

$$p < .000$$

$$r = +.19948$$

10. V4 vs. V18

Question 12.2 = 2nd choice - Of these sport programs shown regularly on TV
which do you watch most?

2nd CHOICE - SPORT B - REGULAR SHOWS

SPORT	Golf	Tennis	Bowling	Baseball	Basket- ball	Car Racing	Football	Wrest- ling	Hockey
1. Baseball	3%	6%	3%	36%	11%	22%	0%	3%	17%
2. Lacrosse	0%	0%	5%	20%	15%	25%	8%	10%	18%
3. Hockey	7%	1%	1%	29%	11%	20%	13%	11%	6%
4. Girls Baseball	9%	9%	0%	15%	9%	36%	9%	0%	9%

$$p < .1831$$

$$r = -.02067$$

CROSSTABULATIONS cont'd

11. V4 vs. V19

Question 13.1 - 1st choice - Of these sports programs shown occasionally on TV which do you watch most?

1st CHOICE - OCC. 1 - OCCASIONAL SHOWS

SPORT	Synchro- nized Swim.	Swim- ming	Skiing	Gym- nastics	Track & Field	Horse Racing	Volley Ball	Soccer	Boxing
1. Baseball	8%	21%	3%	15%	13%	10%	0%	10%	21%
2. Lacrosse	5%	14%	11%	23%	14%	5%	0%	7%	23%
3. Hockey	3%	12%	11%	6%	18%	6%	3%	13%	28%
4. Girls Baseball	0%	0%	0%	42%	42%	8%	8%	0%	0%

$$p < .0074$$

$$r = +.07353$$

12. V4 vs. V20

Question 13.2 - 2nd choice - Of these sports programs shown occasionally on TV which do you watch most?

2nd CHOICE - OCC. 2 - OCCASIONAL SHOWS

SPORT	Synchro- nized Swim.	Swim- ming	Skiing	Gym- nastics	Track & Field	Horse Racing	Volley- ball	Soccer	Boxing
1. Baseball	6%	21%	6%	6%	27%	3%	9%	9%	12%
2. Lacrosse	2%	12%	10%	7%	24%	7%	7%	5%	24%
3. Hockey	2%	19%	11%	7%	21%	8%	4%	10%	18%
4. Girls Baseball	0%	50%	0%	8%	25%	8%	0%	8%	0%

$$p < .7386$$

$$r = -.04955$$

correlation so that again we find those children and youth involved in the most aggressive and violent sport activity, view the most aggressive and violent TV shows in this category. For example, hockey and lacrosse players ranked 'boxing' first (28% and 23% respectively); whereas, boys involved in Little League Baseball ranked this activity much lower (21%). Girls involved in Little League Baseball ranked 'gymnastics and track and field' first (42% each) and non listed 'boxing' among their choices.

Project Competition Concern

The results cross-tabulation of sports participation with the Professional Athletic-Amateur Sport Forced Choice opinionnaire are summarized on the chart which follows. Perusal of this chart shows that in those instances where there is a difference in attitude (mainly questions 3, 5, 12, and 13), it appears that baseball players are oriented primarily to the true amateur/school and sport model, while lacrosse and hockey players identify strongly with professional athletic model. On question 3 when questioned on objectives, 63% of the boys playing baseball (93% of the girls) indicated that they partake for 'fun'.

56% of the lacrosse players said that they participated in order to 'work to win and to be aggressive.' On question 5, time commitment, hockey players were much more inclined to 'practice six or more hours per week (60%) than were baseball or lacrosse players (41% and 33% respectively). On question 13, in terms of philosophy 55% of the baseball players indicated 'any game worth playing is worth playing even if poorly' whereas, 65% of the hockey players and 58% of the lacrosse players felt 'that a game worth playing is worth playing well.' On question 10, decision making, those involved in baseball

	Column A	Column B	1. Ultimate Goal	2. Aim	3. Objective	4. Rewards	5. Time	6. Player Selection	7. Rules	8. Schedule	9. Evaluation	10. Decision	11. Growth	12. cliches	13. Philosophy	
	A ₁	B ₁	win and/or excell participate & play	generalization specialization skills development	work, to win aggression relaxation	playing is its own reward, no banquet achievement should be rewarded, ban- quets & trophies	5 hours or less 6 hours or more	Player play the best most often	Letter of law (gamesmanship)	Schedule local and league competition	by standings & competitors' calibre on player improvement & numbers participat- ing	Decision state/province or national local league	Growth rate control & rapid development coordination & natural evolution	12. cliches It doesn't matter if you win or lose; but how you play the game. No excuse is adequate for losing. No cost is too high for winning	13. Philosophy A game worth playing is worth playing even if poorly well.	
Overall	40 < 63			43 < 57	55 > 45	37 < 63	48 < 52	31 < 69	25 < 75	49 < 51	32 < 68	41 < 59	32 < 68	73 > 27	60 > 38	
Baseball	38 < 62			45 < 55	37 < 63	35 < 65	59 > 41	36 < 64	21 < 79	50 = 50	25 < 75	23 < 77	23 < 77	59 > 41	45 < 55	
Lacrosse	40 < 58			34 < 66	56 > 44	43 < 57	67 > 33	27 < 73	39 < 61	50 = 50	36 < 64	44 < 56	33 < 67	66 > 34	58 > 37	
Hockey	38 < 62			45 < 55	64 > 36	38 < 62	40 < 60	31 < 69	24 < 76	45 < 55	35 < 65	47 < 53	34 < 66	78 > 22	65 > 34	
Girls Baseball	7 < 93			39 < 62	7 < 93	7 < 93	36 < 64	21 < 79	8 < 92	85 > 15	9 < 91	15 < 85	31 < 69	85 > 15	58 > 42	89

(77%) favoured 'local league control' whereas, those involved in lacrosse and hockey were more oriented to 'state, provincial or national control.' In general, it can be said that boys and girls involved in baseball favoured the amateur sport model, while the boys involved in lacrosse and hockey favoured professional athletic model.

IV Viewing Diary - Feelings and Behavior - Total Hours vs. Individual Listings

Data from the subjects' reports of TV shows watched are presented in Table 3.1. The table indicates the number of shows listed over all respondents, i.e., 234 children of the 256 responding report watching one show, 218 children report watch two shows, etc., with a mean of 5.52 with a standard deviation of 4.26. TV 001 which records the first individual show listed shows 234 cases with a mean of 2.7, plus or minus 1.2. The mean here is an aggression index resulting from categorization of all the shows seen on a 5 point Likert scale (1 equals very non-aggressive; 2 equals non-aggressive, 3 equals neutral, 4 equals aggressive and 5 equals very aggressive). 2.7 would fall in the neutral range leaning towards non-aggressive. TV 007 provides the data (218 cases) for the second show listed (mean 2.6, plus or minus 1.2). All shows listed can be read in a similar manner down to the 18th (TV 103 where the number of cases dropped to 19 with a mean of 2.4 plus or minus 1.2).

Pearson Correlation -TV Viewing Diary - Total Hours vs. Aggression Index

In order to ascertain any correlation between the number of hours viewed and the various individual shows listed, a Pearson correlation coefficient was run (hours vs. TV 001-TV 103). As seen in the Table below in four instances a significant relationship was found. TV 001

TABLE 3.1

TV Viewing Diary - - Individual Listings

<u>Variable</u>		<u>Cases</u>	<u>Mean</u>	<u>Standard Deviation</u>
Total Hours		256	5.5234	4.2693
1st show listed	TV 001	234	2.7137	1.2323
2nd	007	218	2.6468	1.2841
3rd	013	202	2.8317	1.3682
4th	019	185	2.7946	1.2815
5th	025	158	2.7278	1.4216
6th	031	137	2.7810	1.2988
7th	037	116	2.6724	1.2634
8th	042	103	2.6990	1.2821
9th	048	88	2.8636	1.3234
10th	055	60	2.9500	1.2545
11th	061	54	2.7037	1.2831
12th	067	49	2.9592	1.2069
13th	073	45	3.0000	1.3484
14th	079	44	2.2273	1.1981
15th	085	41	2.4390	1.3238
16th	091	36	2.5278	1.2068
17th	097	28	2.7500	1.1746
18th	103	19	2.4737	1.2188

	Tv 001	TV 007	TV 013	TV 019	TV 025	TV 031	TV 037	TV 043	TV 049	TV 055
HOURS	.1174									.1868

*Note - only significant
values of r
are recorded

	TV 061	TV 067	TV 073	TV 079	TV 085	TV 091	TV 097	TV 103
HOURS							.2587	.4155

PEARSON CORRELATION COEFFICIENTS

(Hours vs. TV 001 - TV 103)

TABLE 3.2

TV Viewing Diary; Total Hours Correlated With Individual
Listings On The TV Aggression Index

correlated positively at + .117 indicating that the higher the number of hours the subject viewed TV, the higher aggression content of those shows listed and viewed; or conversely, the lower the number of hours the lower the aggression content. The number of hours and TV 005 correlates positively at + .18; TV 097 at + .25 and TV 103 at + .41. The fact that all of these correlations are positive and increase, would appear to support the thesis that the more TV subjects watched, the higher their aggression index.

In order to gain further insight into the relationships in terms of TV viewing and sports participation, the sport/athletic participation was cross-tabulated with the aggression index for TV 001. (See below). No significant difference or association was detected; however, in general boys and girls baseball players watch very non-aggressive or non-aggressive TV shows, while hockey and lacrosse players watch aggressive and very aggressive shows.

Cross-Tabulation: TV Viewing Diary Listings with Opinionnaire Items

The TV shows listed at each of the 18 recording positions were cross-tabulated with the other data secured on the opinionnaire. The cross-tabulations which were significant (along with the Kendall Tau TV diary listings with opinionnaire items) are indicated.

It can be seen TV 001 was significantly associated ($p < .000$) with TV 003--question 11, 'what type of show do you watch?' The correlation was negative, indicating that the higher the rating on the TV aggression index, the lower the response on the motivation index. That is, those who watched 'very aggressive or aggressive shows' (4 and 5 on the vertical axis) watched them for 'fun and action' (no. 1 and 2 on the horizontal axis). Conversely, those who listed very non-aggressive shows listed 'mystery and interesting'

Sports/Athletics Participation Crosstabulated
With The Aggression Index For TV 001

V4 vs. V34




SPORT vs. TV 001

SPORT	Very non- Aggres- sive	Non- Aggres- sive	Neutral	Aggres- sive	Very Aggres- sive
1. Baseball	37%	18%	26%	5%	13%
2. Lacrosse	16%	37%	34%	5%	8%
3. Hockey	10%	38%	9%	36%	6%
4. Girls Baseball	43%	21%	14%	14%	7%

along with 'fun.' Although the chart is not shown the second shows listed, TV 007, and fifth shows listed, TV 043 were also found to be significantly associated with the aggressive index ($p < .03$ for both).

The third shows listed, TV 013, were significantly associated with the behavior of parents (011) ($p < .007$). Analysis of the percentage responses show that when the subjects watched 'very non-aggressive or very aggressive shows,' parents for the most part 'don't watch it' (61% and 67% respectively); whereas, when children/youth watch non-aggressive, neutral, or aggressive shows there is an inclination for parents to 'watch it' (61%, 64% and 55%).

On the third shows viewed (TV 013) a significant relationship ($p < .03$) and high negative correlation ($r = .20$) was shown with the frequency with which the subjects watched the show. It can be seen that the 'less aggressive' the content, the higher the probability that they will only watch the show 'sometime'; while conversely, the 'higher the aggression' content the higher probability that they will 'always watch' the show.

The eighth shows listed, TV 043, were significantly associated with 'after watching this I feel  'happy',  'neutral', or  'sad', ($p < .04$ and $+4.13$). This indicated that the more aggressive the show the sadder post-viewing feeling; or conversely, the less aggressive the show the happier the after show feeling.

CROSSTABULATIONS

TV Diary Listings With Opinionnaire Items

Question - What type of show do you watch?

TV 003

1st shows listed TV 001	Fun	Action	Mystery	Inter- esting	Acting
1. very VNA non-aggressive	44%	6%	14%	31%	6%
2. NA non-aggressive	76%	13%	1%	8%	1%
3. neutral N	41%	11%	0%	32%	16%
4. aggressive A	70%	9%	2%	13%	7%
5. very aggressive VA	53%	35%	0%	12%	0%

$$p < .0000$$

$$r = -.02775$$

Question - When this show is on my parents ...

TV 011

2nd shows listed TV 007	Watch it	Don't Watch it
1. VNA	39%	61%
2. NA	61%	37%
3. N	64%	36%
4. A	55%	45%
5. VA	17%	67%

$$p < .0079$$

$$r = -.02064$$

Question - I watch this show ...

TV 014

3rd shows listed TV 013	Always	Sometimes
1. VNA	21%	79%
2. NA	34%	66%
3. N	46%	54%
4. A	50%	50%
5. VA	52%	48%

$$p < .0390$$




$$r = -.20823$$

Key: VNA - Very non-aggressive
 NA - Non-aggressive
 N - Neutral
 A - Aggressive
 VA - Very aggressive

CROSTABULATIONS cont'd

Question - After watching this show I feel ...

IV 048

8th showslisted TV 043	 Happy	 Neutral	 Sad
1. very VNA non-aggressive	76%	24%	0%
2. non-aggressive NA	50%	50%	0%
3. neutral N	52%	24%	24%
4. aggressive A	61%	17%	22%
5. very aggressive VA	57%	29%	14%

$p < .0418$

$r = +.13111$

Question - I watch this show because ...

TV 051

9th showslisted TV 049	Fun	Action	Mystery	Inter- esting	Acting
1. VNA	73%	13%	7%	8%	0%
2. NA	63%	17%	0%	17%	4%
3. N	7%	29%	14%	29%	21%
4. A	43%	29%	14%	10%	5%
5. VA	20%	50%	0%	20%	10%

$p < .0333$

$r = + .22931$

Key: VNA - Very non-aggressive
NA - Non-aggressive
N - Neutral
A - Aggressive
VA - Very aggressive

Question - When this show is on my parents ...

TV 076

13th showslisted TV 073	Like it	Don't Like it	Don't Care
1. VNA	83%	0%	17%
2. NA	50%	50%	0%
3. N	20%	20%	60%
4. A	80%	10%	10%
5. VA	57%	0%	43%

Of the ninth shows listed, (TV 049), significant association and positive correlation ($p < .03$ and $+ r = .23$) was shown with 'I watch this show because' very non-aggressive or non-aggressive shows are 'fun and action;' whereas, the neutral, aggressive, and very aggressive shows are high in 'interest, mystery and acting.'

The thirteenth shows listed (TV 073) were significantly and positively associated with parental behaviour ($p < .01$ and $+ r = .07$). This shows that, in general, as the subjects were viewing neutral, aggressive, or very aggressive material, the parents 'didn't care' or indeed a high percentage 'liked it' (aggressive = 80%, and very aggressive = 57%); whereas, when the subjects were watching very non-aggressive 83% 'liked it.' Another interesting analogy to come out of this chart is the fact that, the parents of the subjects who watch very non-aggressive or non-aggressive shows who 'don't care' is low (17% and 0% respectively); whereas, the parents of those who watch neutral, aggressive or very aggressive is relatively high (60%, 10% and 43% respectively).

The seventeenth shows listed (TV 097) were associated significantly and positively ($p < .001$ and $+ r = .11$) showing the higher the aggressive index rating of the shows listed, the higher the probability the parents 'don't watch,' or the lower the aggressive content, the higher the probability the parents 'will watch' the show. It should be pointed out that no shows of a very aggressive nature were listed among the

CROSSTABULATIONS cont'd

Question - When this show is on my parents ...

TV 101		
17th show listed TV 097	Watch it	Don't Watch it
1. VNA	75%	25%
2. NA	67%	33%
3. N	100%	0%
4. A	71%	29%

$p < .0013$

$r = +.11110$

Question - I watch this show because it is ...

TV 105				
18th show listed TV 103	Fun	Action	Mystery	Inter- esting
1. VNA	60%	40%	0%	0%
2. NA	53%	0%	17%	0%
3. N	0%	0%	0%	100%
4. A	20%	0%	60%	20%

$p < .0050$

$r = +.42006$

KEY: VNA - Very non-aggressive
 NA - Non-aggressive
 N - Neutral
 A - Aggressive

28 cases. Similarly, among the eighteenth shows listed, no very aggressive shows were listed among the 19 cases. There was a significant association and positive correlation ($p < .005$ and $+ r .42$) indicating that the lower the rating on the aggressive index, the more the shows were watched for 'fun' and the higher the rating, the more they were watched for 'mystery and interest.'

In summary, viewing this random sample of up to eighteen entries on the TV diary arranged by a panel of experts on a semantic differential ranging from 1 - very non-aggressive to 5 - very aggressive, cross-tabulation of the various responses similarly arranged on a semantic differential from the least aggressive to the most aggressive the following observations can be made:

- 1) The respondents indicate the more violent the show the more likely they will watch it 'always;'
- 2) Aggressive and very aggressive shows are watched for the 'mystery, interest and acting;' and non-aggressive and very non-aggressive are watched for the 'fun and action;' among the heavy TV viewers (9th - 18th shows listed); whereas among light TV viewers (1st to 8th shows listed) very aggressive and aggressive are watched for 'fun and action,' while very non-aggressive and non-aggressive shows are watched for 'mystery, interest and action;'
- 3) In general, parents 'like it' when their children watch TV regardless of the aggressive rating, 50% 'don't like it' when their children watch non-aggressive shows, and a high % (43) don't care if their children watch very aggressive shows; (See 13th shows listed, TV 073 vs TV 076).
- 4) Parents are inclined to 'watch aggressive shows with their children' and 'not to watch very non-aggressive shows;' and
- 5) Regardless of the aggression content children feel happy 😊, in general, after watching TV. It can be added, however, the more violent the show, the more likely the children will feel sad, ☹ or unhappy after viewing the show.

Summary

The results of the Written opinionnaire served two major purposes:

- (1) Assured that there is no significant difference within the subgroup samples (i.e., those receiving pro-social, anti-social or serving as a control from within each of baseball for boys and girls, lacrosse and hockey), and
- (2) Provided descriptive data on the sports/athletic and TV viewing habits, preference and feelings of the children/youth.

General conclusions can be drawn:

(1) Children participate in sports/athletics for the 'skill, game itself, action, reward, fun and enjoyment,' and like least 'not playing, aggression, drills and practices and, of course, losing.'

(2) TV viewing is only slightly heavier in the winter than in the summer, and is watched mainly in the evening. In both the winter and the summer, the number of hours children/youth view TV makes it a significant force in their education and development. TV certainly rivals the family and school as a significant other influence in the life of the child/youth.

(3) Children/youth watch mainly 'sport, cartoons and comedy'; and, therefore, any emphasis in terms of decreasing anti-social role models or conversely increasing pro-social role models should be directed to these three content areas.

(4) Of the sports shown, most frequently on TV hockey is the most significant for Canadian children/youth who are active in sports in Southwestern Ontario, followed at a very distant second by other popular athletic spectator activities such as 'football, baseball, and basketball.'

(5) Of the sports occasionally shown on TV 'boxing' ranks first in the preference followed at quite a distance by the high level olympic type sports which are for the most part viewed as pro-social '(track

and field, swimming, gymnastics, etc.)

6) In terms of sports/athletic participation the majority favour the, amateur sport model as opposed to the professional athletic model.

7) Children/youth involved in hockey and lacrosse prefer more aggressiveness and violence in both their sport/athletic activities and TV viewing diet. Those involved in baseball (both boys and girls) are less inclined towards aggression and violence either in their sport or in TV viewing.

8) The higher the number of aggregate listed in the TV viewing diary, the higher the probability that the shows viewed will be aggressive.

9) From the TV viewing diary we can see that the more violent the show is, the more likely it will be 'watched always,' and that the parents will join the child/youth in 'watching the show.'

10) Parents like it when their children watch TV regardless of the aggression index, 50% 'don't like it' when their children watch non-aggressive shows, and a high percentage (43%) 'don't care' if their children watch very aggressive shows.

FOOTNOTES

¹See Charles K. Atkin and Bradley S. Greenberg, "Family Child and Message Factors Mediating Children's Pro-social Learning from Television," paper and Proceedings of the Symposium on Perspectives on the Influence of Television on the Development of Children, Annual Convention of the American Educational Research Association, held at San Francisco, April, 1976.

²Mike Frisby, an honours Faculty of Business Administration graduate, was chosen to interact with Little League Baseball; Cheryl Brown, an honours Faculty of Human Kinetics student, was chosen to communicate with the St. Clair Summer Hockey School; and Patti Jones, a Faculty of Human Kinetics honours student was chosen to act as liaison person with the Windsor Minor Lacrosse Association.

³See Dick Moriarty and Marge Holman Prpich, "Chatham Summer Basketball League Viewed by Change Agent Research," Catalogue of Current Ontario University Recreation and Leisure Research, in Research and Education, January, 1977.

⁴See Charles R. Corder-Bolz, "Television Content and Children's Social Attitudes," Progress Report to the Office of Child Development, DHEW (Austin Texas: Southwest Educational Development Laboratory, 1976).

⁵It would seem that the children/youth involved in sports have different viewing preferences from children/youth not involved in sport or athletic participation. Compare Greg Fouts, "Children and Entertainment Television", Report to the Royal Commission on Violence in Communications Industry, 1977.

CHAPTER IV

PRO-SOCIAL AND ANTI-SOCIAL TV VIEWING TREATMENT AND EFFECT AS REFLECTED IN FACIAL AND VERBAL REACTION

In order to identify the specific effect of pro-social or anti-social media models upon the perceptions of aggression and violence, and actual behavior while viewing videotapes, extensive monitoring of behavior was conducted by the media observation project team. This chapter reports the procedure and observations of the media project team responsible for projecting the TV models and recording the response of the subjects.

Liaison With the Sport/Athletic Organizations

Liaison with the sport/athletic organizations which provided the laboratory/field for this research project was initially secured through the University of Windsor Sports Institute for Research/Change Agent Research. SIR/CAR has conducted numerous studies throughout Southwestern Ontario, as well as specific studies on behalf of the three organizations which were to be involved: St. Clair Hockey School; Windsor Minor Lacrosse and Windsor District 5 Little League Baseball (Windsor Sandwich East League). The St. Clair Hockey School in Tecumseh, Ontario provided the best laboratory situation since the children/youth were committed to the school five days per week, approximately seven hours per day. The lacrosse observations and treatments were held in conjunction with the Windsor Minor Lacrosse Instructional and Participation League which provides exposure of children/youth to lacrosse for periods of up to two hours a day, two or three times/week. During this time the children/youth receive instruction and engage in scrimmage. The Windsor Sandwich

East Baseball League (of Windsor District 5 Little League Baseball) required observation of subjects during early season league games (usually two times per week) and treatment at a separate location two times/week.

Cooperation from all three organizations were excellent; however, there can be little doubt that hockey provided the best laboratory/field situation, followed at a quite a distance by lacrosse and baseball.

Over a three week period, the hockey school provided three matched groups on successive weeks, each of which groups were available throughout the entire day for five consecutive week days. Time was structured for both hockey instruction and scrimmage games (as well as a limited number of other sport/athletic activities) providing an excellent controlled environment in which to test the actual effect of pro-social and anti-social TV models. To a certain extent similar conditions existed in lacrosse, but unfortunately were interfered with by the fact that the lacrosse school coincided with telecasting of the Olympics. This resulted in a decline in overall participation at the lacrosse school (and of course in the treatment as well as pre- and post-testing). The major problem in baseball was the logistics of moving children/youth about to secure exposure to pro- and anti-social TV inputs as well as the uncertainty that surrounds any outdoor activity dependent on the weather for the holding of games. The effects of these organizational challenges are reflected in the size of the N and strength of the data for hockey, lacrosse, and baseball. It should be noted that the N for girls' baseball is extremely low due to the fact that this league is in the formative stage. Further, girls who participate do

not come from one geographic region (Windsor Sandwich East) but rather are drawn from all eight Little League Regions in District 5. The specific liaison reports listed below indicate in more detail the procedure utilized in providing treatment as well as pre- and post-testing.

Hockey

The school's players were divided into 3 groups on the basis of skill and age (A, B & C); all groups were to be observed. The hockey liaison then went to the hockey school. The areas for presenting the films and binocular rivalry was viewed. An area for storage equipment was requested.

Hockey films were shown to the 3 separate groups on Tuesday and Thursday for 30 to 40 minutes. The pro-social and anti-social groups received the appropriate treatment while the control groups received no T/V input. A porta pak was set up during the films to view the subjects. Slides were taken of all events at the hockey school to serve as a permanent record and cross check of personal observation data. During treatment films observation of the subjects' behaviour was recorded at three minute intervals.

Lacrosse

During all film sessions facial expressions of the players were recorded at three minute intervals. During the intervening three minutes, vocal reactions (positive or negative) were recorded. Anti-social and pro-social television media (and for the youngest group control media) was shown to the three age groups on Tuesday or Wednesday for two consecutive weeks. Media was shown to the oldest group of players, the midget/juveniles, on Tuesday nights after league games. During all film sessions

facial expressions of the players were recorded at three minute intervals. During the intervening three minutes vocal reactions (positive or negative) were recorded.

Baseball

Anti-social and pro-social television presentations were made during the second week of the baseball study on Tuesday and Thursday. Each tape was approximately 30 minutes in length. During the player's viewing of the videotapes, facial expressions were recorded at three minute intervals. During the inter-observation period, vocal reactions were recorded.

TV Viewing Treatment

TV viewing treatment was the responsibility of the Media Project Team. Both members had previous training in the SIR/CAR System, media studies, and practical experience in using audio visual equipment. This project team had a two fold responsibility:

(1) securing, categorizing and projecting pro-social and anti-social TV treatment tapes; and

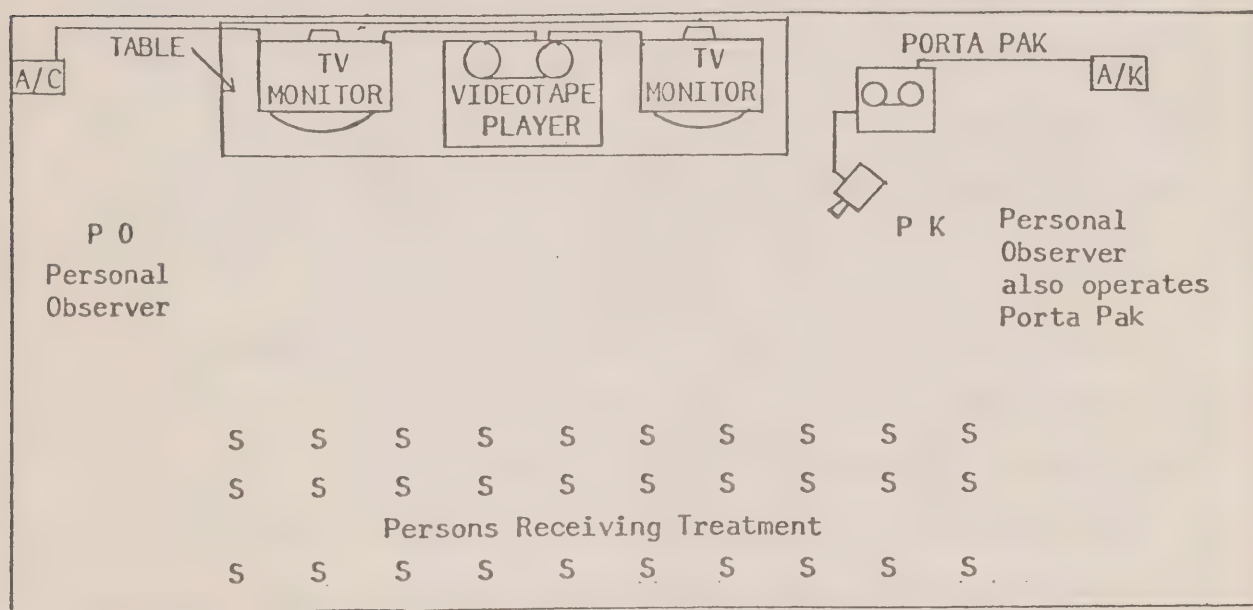
(2) recording and monitoring by TV and 35 mm slides reactions of subjects while viewing TV videotapes, as well as the subject's behavior during participation in their sport/athletic activities pre- and post-treatment.

Procedure for Collecting Data During Treatment Sessions

A 1/2" portable videotape unit, or porta pak was used as an observation tool. Observations with the porta pak were coordinated with observations made by personal observers using the "Faces Behavioral Scales."¹

During the combined observation and treatment, the tape counter numbers were noted on both the recording machine and the playback machine. With this provision, any overt reaction noticed on the recorded porta pak tape could be checked with the content of the treatment tape immediately preceding the reaction.

Location of the Site: shows a typical set up of media tools for treatment and observation.



Key: PK = Porta Pak Observer
 PO = Personal Observer
 S = Subjects

Over 400 - 35 mm slides were shot in an attempt to illustrate all aspects of the research project. Records were kept for each roll of film shot and included, the data, place and time of the event, and the type of event.

Monitoring Facial Expressions and Vocal Reaction During Treatment

Psychology Professor Paul Ekman has conducted studies to assess the correlation between behavior of children while viewing TV aggression and violence, and their subsequent aggressive behavior.² Eckman's studies indicate that children/youth who smile and appear happy while viewing aggression and violence subsequently behave in a more aggressive or violent way than children who are indifferent or frown while watching TV aggression or violent TV shows.³

Personal observation sheets used in previous studies were amended and adapted to record the facial expressions and positive or negative verbal reactions of children/youth viewing pro-social and anti-social videotapes. (Sample observation form is provided in Appendix D).

Analysis

In order to arrive at overall percentage values for each sport by treatment combination, data were summed over all of the three minute interval observations to obtain the total number of each of the facial expressions and vocalization types for that treatment by sport condition. The ratio of the number of the particular expressions observed in that group to the total number of expressions observed yielded the percentage for each.

The distribution of facial expressions during the viewing of television presentation reveals no marked differences across sports activities or treatment conditions in the percentages of smiles, neutral expressions, or frowns. (See Table 4.1). The overall summary suggests a tendency toward more expression, i.e., fewer neutral faces and more smiles and frowns, among the anti-social treatment group than among the other groups. An

Table 4.1 Summary of distribution of facial expressions during television viewing.

Overall

	Smiles	Neutral	Frowns	
Pro-Social	14.58%	84.25%	1.17%	100%
Anti-Social	18.99%	76.34%	4.67%	100%
Control	12.50%	87.50%	.0%	100%

Hockey

	Smiles	Neutral	Frowns	
Pro-Social	15.38%	84.62%	.0%	100%
Anti-Social	13.61%	86.39%	.0%	100%

Lacrosse

	Smiles	Neutral	Frowns	
Pro-Social	9.93%	86.09%	3.97%	100%
Anti-Social	9.22%	88.02%	2.76%	100%
Control	12.50%	87.05%	.0%	100%

Baseball

	Smiles	Neutral	Frowns	
Pro-Social	16.54%	82.56%	0.90%	100%
Anti-Social	24.07%	68.75%	7.18%	100%

Note: Since there was no TV exposure for the control groups in Hockey and Baseball, there obviously can be no observation on facial expression and/or positive or negative verbal behavior.

examination of the percentages of different facial expressions by sports, however, reveals that this is largely due to higher percentages of smiles and frowns among the baseball players while watching the anti-social presentations. In general, baseball players showed the largest percentages of smiles and frowns and the smallest percentages of neutral expressions.

Facial expressions were throughout dominantly neutral regardless of the specific presentation. A somewhat greater tendency to smile seems to be present among both the hockey and baseball players relative to lacrosse players, and a slightly greater tendency to frown appears among the lacrosse and baseball players relative to the hockey players.

The distribution of vocalizations must be interpreted in a somewhat different way from the data on facial expressions. While all children observing the films exhibited some facial expression which could be classified into a smiling, neutral, or frowning category, children did not necessarily all vocalize during the films. Thus, the percentages of positive and negative vocalizations are based on the total number of vocalizations which actually occurred during a viewing session. (See Table 4.2).

In general, when vocalizations occurred, they tended to be positive. It will be noted that in no case was the percentage of positive (as opposed to negative) vocalizations less than 50% and was more characteristically in the region of 80%.

Among the lacrosse and hockey players, those viewing the pro-social presentations were slightly more positive in their vocalization than were those viewing the anti-social presentations. The major difference between these two groups was that the lacrosse players tended to emit proportionally more negative vocalizations, overall.

Table 4.2 Summary of distribution of vocalizations during television viewing.

Overall

	+ Vocalization	- Vocalization	
Pro-Social	61.59%	38.41%	100%
Anti-Social	85.74%	14.26%	100%
Control	86.36%	13.64%	100%

Hockey

	+ Vocalization	- Vocalization	
Pro-Social	100.00%	.0%	100%
Anti-Social	90.91%	9.09%	100%

Lacrosse

	+ Vocalization	- Vocalization	
Pro-Social	82.61%	17.39%	100%
Anti-Social	76.12%	23.88%	100%
Control	86.36%	13.64%	100%

Baseball

	+ Vocalization	- Vocalization	
Pro-Social	53.56%	46.44%	100%
Anti-Social	86.22%	13.78%	100%

Vocalizations among the baseball players show a rather different pattern. Negative vocalizations were more common in general and the percentage of negative vocalizations during the pro-social television presentation is strikingly higher than in any other treatment/sport combination.

FOOTNOTES

¹See Paul Ekman, "Universal Facial Expressions of Emotion," California Mental Health Research Digest, Vol. 8, No. 4 (Autumn, 1970), 151-158.

²See Paul Ekman and Wallace V. Friesen, On Masking the Face, (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1975).

³Paul Ekman, Robert M. Liebert, Wallace V. Friesen, Randall Harrison, Carl Zlatchin, Edward J. Malmstrom, and Robert A. Beron, "Facial Expressions of Emotion While Watching Televised Violence as Predictives of Subsequent Aggression," reproduced from Television and Social Behaviour, Vol. V: Television's Effects--Further Explorations. A Technical Report to the Surgeon General's Scientific Advisory Committee in Television and Social Behaviour (Washington, D.C.: U.S. Printing Office, 1972).

CHAPTER V

BINOCULAR RIVALRY: ASSESSING THE EFFECT UPON PERCEPTION
OF AGGRESSION RESULTING FROM EXPOSURE TO PRO-SOCIAL AND
ANTI-SOCIAL TV MODELS

Binocular rivalry has previously been utilized to test the effect of the degree of involvement of children/youth in little league all-star baseball on the perception of aggressive, violent or hostile stimuli.¹

In normal viewing the two eyes receive consistent images. In binocular rivalry different slides are presented, one to each visual field. The effect of such a presentation is that one of the images presented dominates and this dominant image is reported by the viewer. In the present study binocular rivalry tests were carried out before and after experimental treatment in order to determine what influence this treatment might have on the perception of the slides. These data were obtained only for the hockey group.

Stimulus Materials

Sixteen slides were selected by the experimenters for presentation. The activities represented were baseball, tennis, football, hockey, surfing, and fitness. These activities are not specifically representative of Canadian culture, but they do represent a varied cross-section of athletic and sporting events with which Canadian children/youth are familiar.

The final decision for the selection was based on content similarity, picture quality and brightness. Every attempt was made to reduce differences that might influence choice in the binocular rivalry situation. All slides were black and white so that no colour preference would be detected. Two pair of slides were

intentionally matched as lie slides. Both pictures presented to the monocular fields were either both aggressive or both non-aggressive in nature.

The following illustration outlines the actual presentation format:

Pair	Left Eye	Right Eye
Slide #1/9	men standing around in sweatsuits (NA)	men centering footballs (NA)
Slide #2/10	a hockey fight behind the net (A)	a hockey fight in front of the net (A)
Slide #3/11	a hockey fight (A)	a goalie standing in net (NA)
Slide #4/12	men tackling and diving at a football (A)	a man throwing a football (NA)
Slide #5/13	a surfer falling (A)	a man surfing (NA)
Slide #6/14	a man laying down injured on a tennis court (A)	2 men playing tennis (NA)
Slide #7/15	a ball player holding another ball player and interfering with the play (A)	a batter (NA)
Slide #8/16	a ball player swinging a bat at another ball player's head (A)	ball players lined up for a picture (NA)

Slides 9 - 16 are the reverse of slides 1 - 8

Pairs 1 and 2 served as lie slides with pair 1 non-aggressive and pair 2 aggressive. For pairs 3 - 8 the aggressive slides were presented to the left eye field of the observer. The left eye field for these pair then represented the aggressive slides, while the right eye field represented the non-aggressive on slides 3 - 8. Subsequently the slides were reversed and shown again to the subject so that in the reversed paired slides the left eye field was exposed to non-aggressive in slides 11 - 16, while the right eye field was exposed to aggressive slides.

In the reversal of the slides, shown as 9-18 control for any right or left eye dominance effect, the number of aggressive or non-aggressive slides shown to each eye, was equated. All slides were in a small file box and could be removed or returned without disturbing the original order.

Testing Procedure

For each of the three treatment groups pre-testing and post-testing were carried out on the Monday and Friday, respectively, of the subjects' attendance at the hockey school. Media treatment sessions occurred on the Tuesday and Thursday of the week for the anti-social and pro-social treatment groups. There was, then, a 24 hour interval between the second media treatment session and the binocular rivalry post-testing.

Subjects were selected randomly from among the participants. As a control for constant error from the presentation order format schedule of presentation was rotated for each subject. The viewing exposure for each trial was .05 seconds. This exposure time helped to eliminate alternation or confusion of images, and also guards against the possibility that the subject might be able to see two scenes superimposed on each other. The responses were recorded on the aforementioned scoresheet. Each subject was tested individually. The subject rested his eyes against the viewer with his hands resting at the base of the stand. The subjects were reminded to keep both eyes open during the brief exposure viewing time. Initially the subject turned his back on the apparatus while the experimenter inserted the slides. This procedure prevented subjects from detecting that two separate slides were being inserted for one trial and it prevented the subjects from viewing any slide before the actual test situation.

Subjects were told that the viewing exposure for each trial would be .05 seconds, and that they could observe the slide as many times as necessary. After viewing they were to describe as best they could, what was happening in the picture. The subjects were told that they would see activity slides; and that it was not necessary to identify the activity unless they felt that by reporting it, it would help them to describe the pictures. The subjects were assured that there were no right or wrong answers but that their responses would depend upon their eye dominancy. This procedure was designed to ensure that subjects would keep both eyes open during testing.

After this, the experiment began. The subject turned away while the experimenter inserted the appropriate pair of slides. After each viewing exposure the subject was asked what they thought was happening in the picture. If the subject was not sure what he saw, he was allowed subsequent views at the same viewing time .05 sec. The subject turned away from the apparatus while the slides were removed. The subject's responses were recorded on prepared data sheets. (Sample provided in Appendix E).

Analysis of Data

Data on the number of aggressive identifications at each measurement time for each treatment group are presented in Table 5.1. Change scores indicate the change in the number of aggressive slides identified from pre-test to post-test. Analysis of variance was carried out on the difference scores. The effect of treatment approaches significance ($F(2,43) = 2.86, p < .10$). It will be noted however, that it was the control group which differed from the other

Table 5.1 Number of Aggressive Slides Perceived During Pre-Test and Post-Test by Experimental Treatment

HOCKEY

1 Subject No.	PRO-SOCIAL T/V			ANTI-SOCIAL T/V			CONTROL NO T/V		
	WEEK 1			WEEK 2			WEEK 3		
	2 Pre	3 Post	4 Change	5 Pre	6 Post	7 Change	8 Pre	9 Post	10 Change
1	5	3	-2	4	2	-2	9	9	0
2	5	6	1	6	0	-6	9	0	-9
3	8	8	0	3	1	-2	9	10	1
4	3	5	2	4	9	5	7	0	-7
5	6	2	-4	4	7	3	6	6	0
6	5	4	-1	5	7	2	3	3	0
7	2	4	2	4	6	2	7	0	-7
8	2	4	2	1	2	1	2	4	2
9	1	2	1	4	4	0	1	4	3
10	2	2	0	11	11	0	3	0	-3
11	2	5	3	4	6	2	8	0	-8
12	6	2	-4	7	9	2	3	0	-3
13	5	1	-4	4	2	-2	4	0	-4
14				5	3	-2	3	1	-2
15				5	5	0	0	3	3
16				5	3	-2			
17				2	5	3			
TOTALS	52	48	-4	78	82	4	74	40	-34
AVE.	4	3.69	-.31	4.58	4.82	.24	4.93	2.67	-2.26

treatment groups (pro-social and anti-social) but that these two groups were not different from each other. The control group showed a substantial decrease in identification of aggressive slides. The pro-social treatment group showed a slight decrease while the anti-social treatment group showed a slight increase in such identification over the period studied.

Discussion

The results of this portion of the study would seem to imply that: viewing anti-social TV models slightly increases identification of violence; while viewing a pro-social TV model slightly decreases identification of violence; and withholding of exposure to either pro-social or anti-social TV models substantially reduces identification of violence.

It is possible that the interval between the treatments and the post-testing (24 hrs.) was too long to sustain any substantial effect on perception. Results may have been different had the second binocular rivalry testing immediately succeeded the TV treatments. It is also possible that the effect of exposure to the TV treatments is content specific, i.e., perception of hockey aggression may be influenced but not perception of aggression in other sports. The test slides presented included only one aggressive-non-aggressive pair of hockey activities. The five other test pairs concerned other sports. It is not possible to assess the potential effects of these variables on the basis of the present data. If either or both were operative we would expect that they would weaken the effect, i.e., they would reduce the pre-test to post-test difference. Thus, even though the treatment effects are not significant, the direction of change may be taken as suggestive.

FOOTNOTE

¹Ann Marie Guilmette, "Identification Class Differences as Determinants of the Perception of Hostile or Non-Hostile Athletic Stimuli," Unpublished Master's thesis, University of Windsor, 1974.

CHAPTER VI

BEHAVIOURAL OBSERVATION

Before considering specific findings regarding relationships between TV inputs and behaviour, several features of the present study deserve emphasis since they differ from other studies in this area. (1) Data were collected for team behavior rather than individual behavior. The reason for the adoption of this procedure is that members of a team interact with each other over a considerable period of time and thus would be expected to mutually influence each other's behaviour. The behaviour of any individual player is, then, not really independent of the team. (2) We examined fairly long term effects of exposure to media, i.e., from 24 hours to one week, intervened between media treatment and observation of behaviour. Immediate effects were not examined and, thus, our results cannot speak to the question of immediate effects.

A summary of the overall findings are presented in Table 6.1. The table contains two sets of findings for each of the sports considered in the study. One set of results headed Experimental TV indicates the relationships found between the experimentally provided media inputs and the observed behavior. The column headed "Order of Means" indicates which group of teams showed the lowest, intermediate, and highest levels of the behavior in question. The column headed ω^2 indicates the proportion of variability among the teams which can be attributed to the experimental input.¹ For example, among the hockey teams those assigned to the anti-social media input showed the lowest levels of aggressive behaviour, those teams assigned to the pro-social media input showed the next highest levels of aggressive

Table 6.1

Summary of Analyses of Variance
and Self-Selected Television Data
for all Groups

BEHAVIOUR CATEGORY	EXPTL. TV	TV SELECTION		
	ORDER OF MEANS	ω^2	\underline{r}	\underline{r}^2
HOCKEY				
Physical Aggression	A-P-C	.103	.307	.094
Non Verbal Aggression	A-C-P	.116	-.447	.200
Verbal Aggression	A-C-P	.656	-.392	.154
Pro-social Behaviour	A-C-P	.613	-.533	.284
LACROSSE				
Physical Aggression	C-P-A	0	-.280	.079
Non Verbal Aggression	A-P-C	.006	-.420	.177
Verbal Aggression	C-A-P	0	.680	.462
Pro-social Behaviour	A-P-C	0	-.441	.194
BASEBALL				
Physical Aggression	C-P-A	.194	-.601	.361
Non Verbal Aggression	C-A-P	.492	.130	.017
Verbal Aggression	A-P-C	0	.261	.068
Pro-social Behaviour	A-C-P	.062	.631	.398

A = Anti-social treatment teams

P = Pro-social treatment teams

C = Control teams

ω^2 = Proportion of variability accounted for by experimental treatment

r_2 = Pearson correlation between self-selected T/V and the variable

r^2 = Proportion of variability accounted for by the relationship between self-selected T/V and the variable

behaviour, and those teams assigned to the control condition showed the highest levels of physical aggression on the ice. Ten and three tenths percent of the variability among the teams on this measure is accounted for by the experimental treatment.

The second set of results in the table indicates the relationships between the degree of aggressiveness in the programs the teams report watching at home and the amount of the indicated behaviour the players show on the ice. The column headed r indicates the direction and strength of the relationship. A negative sign on the value in this column indicates that the less aggressive the media input, the higher the level of the behaviour in question. The column headed r^2 indicates the proportion of variability among the teams which can be attributed to this relationship. For example, among the hockey teams, the positive relation of .307 indicates that teams which select more aggressive programs to watch are the teams which are more physically aggressive. Nine and four tenths percent of the variability among the teams is accounted for by this relationship. With regard to the TV selection data, causal inferences are not warranted. Several plausible explanations may be offered for such relationships. A team may be more aggressive because it watches more aggressive TV; conversely, a team may prefer to watch more aggressive TV because it is more aggressive; or a team may watch more aggressive TV and be more aggressive because of some unknown factor, such as, parental permissiveness of aggression.

Analysis of the data regarding the relationships between media inputs and behaviour on the playing field lead to two overall conclusions. The first conclusion is that exposure to pro-social media inputs appears to be strongly related to increased levels of pro-social behaviour among the player-viewers. In two of the three

sports (hockey and lacrosse) the relationship between pro-social inputs and pro-social behaviours are strong and consistent over both the experimentally provided media presentations and the players' self-selected media inputs, i.e., programs they regularly watch. Since the two sources of media input are independent, a relationship which appears in both cases must be considered to have a real significance.

The second conclusion is that we have not found evidence to support the contention that exposure to anti-social media inputs leads to increased levels of aggressive behaviour among the player-viewers. In none of the three categories of aggressive behaviour observed are there strong and consistent relationships in that direction.

In general, we did not find treatment effects apparent after a 24 hour interval and not after a longer interval. There is a suggestion of such a trend, however, in the data for non-verbal symbolic aggression. Teams exposed to the anti-social treatment presentations showed slightly higher levels of this behaviour than did the pro-social treatment groups after the shorter interval but not after the longer interval. This trend is consistent across all three sports and all age levels with the exception of the youngest lacrosse players. This trend, in the absence of similar trends for other behaviours, suggests that this kind of behaviour may be modelled more readily than other aggressive behaviours but that it dissipates relatively quickly over time.

Some comment is warranted on the overall conclusions. The finding regarding the effect of pro-social inputs is of considerable practical import. Those sports in which the effect is strongest are also those in which the orientation of the children reflects more

professional athletic values. We may expect that this orientation makes them particularly susceptible to the behaviour model provided by the professional athlete. In this context, the highlighting of pro-social behaviour among professionals might be expected to be particularly effective in producing such behaviour among young players.

The non-finding of an effect of anti-social media presentations producing higher levels of aggressive behaviour should be interpreted cautiously. For one thing, there may be immediate effects which would not appear after a delay. It is also possible that against a background of televised athletics in which there is considerable aggression, the presentation of a further hour to our subjects was not sufficient to elicit differences.

While the general findings suggested above are reasonably consistent across the three sports, there are variations. There appear to be two possible interpretations for these differences. One possibility is that the failure of a result to be replicated across all sports and the two types of media input is an indication of unreliability of that result. The second possibility is that individuals differ in their reaction to various types of media input. It is noteworthy that individual choice is involved in the selection of which sport an individual will play. Those characteristics which lead an individual to play hockey may be quite different from the characteristics which lead one to play baseball and may involve both physical and personality factors.

Thus, we will examine the patterns of results in each of the sports separately and in greater detail.

Data Collection Procedures

Before the baseball, lacrosse and hockey schedules had begun the core staff of observers developed coding forms for each sport (a sample form for each sport has been included in Appendix F). Provisions were made in the form for some qualitative as well as quantitative assessment of the behaviour observed, be it pro-social or aggressive behaviour. All major categories of behaviour that were recorded on the form were clearly defined by the core observation staff. Observers were trained to identify instances of the behaviour according to these operational definitions.

Observers were chosen from among graduate students and senior undergraduates were employed. All persons were adequately paid for their work to encourage responsible and reliable performances. They were instructed in the use of the coding forms and were shown how all relevant behaviours were to be recorded. Slight modification of the basic form was necessary for baseball since some behaviours, e.g., stick to stick contact, which are quite prevalent in hockey and lacrosse, are absent in baseball. During the course of the project, a total of 13 observers were employed including the core staff of 3.

Assignment of observers to leagues, age groups, and teams was randomized so that no one observer saw mostly one league, one age group, or one team.

Operational Definitions

Verbal Aggression

Audible speech directed towards self or others that in some way demeans, intimidates or threatens that person or group. One closed statement, regardless of length, represents one act of verbal aggression.

Non-Verbal Aggression

Any non-verbal behaviour, excluding physical contact, directed towards self or others that appears intended to demean, intimidate or threaten that person or group. One closed act,* regardless of duration, represents one act of non-verbal aggression.

Physical Aggression

Touching behaviour, by parts of the body or equipment, directed towards others that in some way appears to demean, intimidate, threaten, or harm a person. One closed act,* regardless of its duration or the severity of its effects, represents one act of physical aggression.

Pro-Social Behaviour

Any act, whether verbal or non-verbal that is specifically directed towards others and appears to have been meant to enhance in some way the physical, psychological or social well-being of that person or group. One closed act,* represents one act of pro-social behaviour.

*Note: The concept of a closed act or statement means that the act or statement in itself can fulfill what appears to be its intended purpose. Repeating the same statement, "Let's go team" over and over again without pausing should represent only one act of pro-social behaviour. On the other hand, the statement, "Let's go team" followed by a pause and then another statement "You're playing well team" will represent two acts of pro-social behaviour.

Hockey

Analysis of variance results for each of the summary variables² at each of the observation periods are provided in the Appendix G (Tables G6.1 through G6.8) followed in each case by a table indicating the mean values for each treatment condition within each age group. A further table (A6.9) provides correlations among the summary variables and the television self-selection variable.

Analysis of variance tables are to be read as follows: The leftmost column of the table indicates for which of the four observation periods the analysis applies. Pre-treatment observations were made after assignment of teams to treatment conditions but before any experimental TV inputs were provided. Mid-treatment I observations were made the day following the first experimentally provided input, and mid-treatment II observations were made the day of the second experimental input. Post-treatment observations were made on the final day of the hockey school week, the day following the second experimental input. The remaining columns indicate the analysis of variance F-ratios and the levels of significance for each of these ratios. Analyses for each variable are by three age levels and three treatment conditions. Those findings which reach the traditionally accepted levels of significance are noted with an asterisk.

Tables of means provide summaries of the raw data upon which the analyses were carried out. The average number of occurrences for each age/treatment combination, as well as, overall age and treatment means are indicated. Since some variation occurred in the number of players and the observation time in the age/treatment combinations, the raw values were corrected according to the following formula:

$$\text{Mean value} = \frac{\text{number of occurrences of behaviour}}{\text{number of players} \times \text{number of minutes}} \times 100$$

This manipulation served to make the data comparable across age and treatment conditions.

Two relationships stand out for the hockey teams in the post-treatment analyses, those involving pro-social behaviour and verbal aggression (see Table G6.1). In both cases the direction of the results indicates that exposure to relatively more pro-social media inputs is related to increased levels of the behaviour in question. Pro-social teams were significantly more verbally aggressive and also more pro-social than were the teams receiving anti-social inputs. This conclusion is supported by the finding that in the self-selected media inputs, teams which viewed relatively non-aggressive program contents also showed higher levels of these two categories of behaviour. It is important to keep in mind the fact that self-selected input is independent of the experimentally provided media inputs. It indicates that regardless of the assignment of the team to experimental input groups those teams whose viewing habits were relatively less anti-social showed more pro-social and verbally aggressive behaviour. It should also be noted that a substantial portion of the variability among teams is accounted for by the media inputs. In the case of experimentally provided inputs more than 60 percent of the variability in both classes of behaviour is directly related to the media input (Table G6.1).

Age does not appear to be an important variable in influencing the level of the observed behaviours among these players. An exception to this occurs during the mid-treatment II observation of pro-social behaviour. Here the youngest group shows the highest level and the oldest group the lowest level of the behaviour. This order is consistent across all the observational periods but reaches a conventionally accepted level of significance only during the mid-treatment II observation.

A relationship between physically aggressive behaviour and anti-social media input is rather conspicuous by its absence. Teams whose at home viewing preferences tend toward more anti-social programs tend to be more physically aggressive. This result, however, is in contrast to the finding for experimentally provided inputs, where the teams given anti-social input were the least physically aggressive (Table G6.1) during the post-treatment observation. The only time during which the anti-social treatment teams show the highest level of physical aggression is before any experimental media input was provided. The relationships for both types of media input are rather weak and probably not deserving of substantial attention.

Lacrosse

Data for the lacrosse teams are presented in Appendix G (in Tables G6.11 through G6.20). The tables may be read in essentially the same way as was the hockey data with one exception. Analysis of variance summary tables indicate differences due to age group, treatment group, and the interaction between age and treatment.

Observations on the lacrosse teams were carried out during three observational periods. Pre-treatment observations were made before any experimental media within the week of each of the media inputs, and post-treatment observations were made during the week following the media presentations and again two weeks later. The intervals between the media presentations and observations of behaviour were, thus, considerably longer than were the intervals for the hockey groups.

Among the lacrosse teams the experimentally provided media inputs show no strong relationships to the observed behaviours. The effect

of the experimentally provided media may have been diluted over this period of time. There appears a trend toward the pro-social treatment groups showing more pro-social behaviour than the anti-social treatment groups at all age levels during the final observation period. In light of the hockey data reported above, this trend is worth noting.

Self selected Television does, show some interesting relationships. As indicated in Table G6.1 some sizeable correlations exist. Consistent with the data from the hockey groups, lacrosse teams who select relatively non-aggressive programs show higher levels of pro-social behaviour than do teams who select relatively aggressive programs. Also consistent with the data from the hockey groups, non-verbal aggression is higher among those who select relatively non-aggressive programs.

It is somewhat surprising to find that physical aggression is negatively related to the aggressiveness of self-selected programs. Although the correlation is not extremely large, it is opposite in direction to that usually expected. This particular relationship is of interest in light of the findings for the baseball teams reported below, which show the same direction of relationship.

The correlation between verbal aggression and the aggressiveness of TV programs selected is the highest to appear among the lacrosse teams. Nearly half the variability among the teams on this measure can be explained by this relationship.

On two of the measures obtained, age is seen to be a significant variable. The three age groups differed significantly in levels of physical aggression during both the pre-treatment observation and the mid-treatment observation. The age effect is no longer significant during the post-treatment observation but as during the earlier

observations, the youngest group shows the lowest level of the behaviour and the oldest group the highest level. The age effect on the measure of non-verbal aggression approaches but does not quite reach statistical significance at both the mid-treatment and the post-treatment observational sessions. Here, however, the order of means is not consistent across the two observations with the youngest group showing the lowest level of the behaviour at mid-treatment and the highest level at post-treatment.

Baseball

Results for the baseball teams stand in some contrast to those for the other groups. Analysis of variance summaries, means, and correlational relationships are provided in the Appendix in Tables G6.21 through G6.29. Observations were made according to essentially the same schedule as were the observations on the lacrosse teams. Pretreatment observations were made during the week preceding the experimental media input, mid-treatment observations were made within the week of the media inputs, and post-treatment observations were made during the week following the media presentations.

On the measure of physical aggression, treatment effects are non-significant at both the mid-treatment and post-treatment observations. This is noteworthy since prior to any experimentally provided media input, those teams assigned to the anti-social group had shown higher levels of physical aggression than had the other groups. The effect of the anti-social treatment then appears to have been to reduce the level of physical aggression in the group rather than to accentuate it. Such an interpretation would be consistent with

the correlational relationships where higher levels of physical aggression are found among those who select relatively non-aggressive programs as opposed to aggressive programs.

Non-verbal aggression is the only dependent variable which shows a significant treatment effect. It is, however, the pro-social treatment teams which engage in the highest levels of non-verbal aggression during the final observation period.

Unlike the lacrosse and hockey groups, pro-social behaviour for baseball teams is positively related to the self-selection of more aggressive television programs, instead of more non-aggressive programs. Among the treatment groups there is the suggestion of an age by treatment interaction. Among the older groups those exposed to the pro-social media presentations tend to increase their level of pro-social behaviour over those exposed to the anti-social media presentations during the final observation period.

Age effects appear rather consistently throughout the baseball data. The younger group exhibits the higher level of physical aggression while the older group shows higher levels of verbal and non-verbal aggression and pro-social behaviour. One interesting age by treatment interaction emerges on the verbal aggression measure. Among the younger children, those exposed to the anti-social media presentation show a higher level of verbal aggression while among the older groups, those exposed to pro-social media show the higher level.

FOOTNOTES

¹Proportion of variance accounted for by analysis of variance was calculated according to the method described by William L. Hays in Statistics for the Social Sciences, 2nd Edition, N.Y.: Holt, 1973.

²The original data obtained contained observations which were classified by mode (with body, with implement), intensity (soft, medium, hard) and recipient (teammates, opponents, coach, official) of the aggressive or pro-social act. Examples of the raw data sheets are provided. For convenience in analysis, data were summed over the appropriate categories to arrive at the summary variables. Coaches' behaviour was not included in any of the summary variables.

CHAPTER VII

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary

In general, a strong to very strong relationship did appear between exposure to pro-social media and high levels of pro-social behaviour. Baseball players were the only group among whom this relationship did not appear. Symbolic aggression (non-verbal and verbal aggression) also tended to be higher among those groupse whose viewing was relatively pro-social.

Our findings also suggest that exposure to anti-social media does not necessarily lead to increased levels of aggressive behaviour among children and youth participants in organized sports at least after delays of one to seven days. Neither the experimentally provided anti-social media inputs nor the aggressiveness of programs watched by the children at home show strong and consistent relationships with aggressive behaviour on the playing field.

The viewing habits of children and youth involved in this study indicate that they prefer to watch sports/athletics, situation comedies, and cartoons rather than mystery, adventure, or dramatic programs. Among the most commonly televised sports/athletics activities, hockey ranks a very strong first with baseball coming in a rather distant second. Interestingly, these preferences were reflected across the lacrosse and baseball groups as well as the hockey groups. Among occasionally televised events, some preference is shown for boxing, car racing, and track and field.

The number of hours spent viewing television shows a wide diversity across individuals with some watching as few as ten hours and others as

many as fifty hours per week. There is little difference between the winter and summer months in the concentration of viewing. There is, however, a heavy concentration of viewing in the evening as opposed to the morning and afternoon. Considerably more than half of the time spent watching television is during the evening hours. Morning is slightly more preferred than afternoon for watching except among the baseball players.

Perception of violence was not markedly changed as a result of pro-social or anti-social exposure. A very slight tendency toward the perception of more violence among the anti-social exposure groups and toward the perception of less violence among the pro-social groups appeared.

Conclusions

On the basis of our results we are led to the conclusion that exposure to pro-social programming has a greater effect on the behaviour of children and youth than does exposure to anti-social programming. Several cautions are in order, however, in interpreting the results. Our data clearly indicate that we are dealing with two rather different populations. Baseball teams showed quite different patterns on both the written opinionnaire portions of the study and in their actual behaviour on the playing field than did the hockey and lacrosse players who were relatively similar to each other. The patterns of relationships were in some cases diametrically opposed in the two groups. In the context of the present study, it was not possible to examine why children and youth elect to play one sport rather than another but the characteristics which are involved in the selection are very likely to interact with media exposure. Hockey and lacrosse are generally, and justifiably, considered to be more

aggressive sports than is baseball. The former include a good deal of physical contact while in the latter physical contact is minimal. Children electing to play hockey or lacrosse may well be more aggressive to begin with than are children electing to play baseball. These individual factors are likely to influence the reaction to viewing both anti-social and pro-social media.

A second unknown in this study is whether children/youth who do not participate in organized sports are systematically different from those who do. A control group of non-participants was not included and, therefore, our findings apply only to those who engage in organized team sports.

Regarding the issue of desensitization to violence as a result of observation of anti-social media, our results do not provide conclusive answers. The indication from the binocular rivalry data would suggest that within the concept of pictorial input, exposure to anti-social media tends to sensitize rather than desensitize viewers. Those players exposed to the anti-social inputs had a slight tendency to see more aggression than did those who had been exposed to pro-social inputs. The trends observed were not statistically reliable. It should be noted that these findings do not necessarily indicate that the same sensitization would be present in the observations of an actual aggressive act.

The Written opinionnaire shows the following trends:

(1) Television viewing particularly of sports occupies a large portion of the life of children/youth.

(2) Of the sports shows shown regularly on television those generally classified as aggressive athletic activities (such as hockey) are viewed most consistently. Similarly, of the occasional sport shows boxing ranks first but is partially balanced by track and

field which is non-aggressive and is almost equally popular. It should be noted that the number of hours devoted to sport/athletics is biased towards very aggressive and aggressive shows.

(3) Among the non-sport/athletic shows viewed children/youth appear to select cartoons and comedy over mystery, adventure and drama.

(4) In terms of general attitude towards sports/athletics, the children/youth showed a dichotomy with boys and girls involved in baseball expressing values identified with true amateur sport model while those involved in lacrosse and hockey identified with the professional athletic model and orientation. The implications for media, suggested above, are that as a result of this identification with professional athletic values, lacrosse and hockey players are likely to model the behaviours portrayed by professional athletes.

(5) Among the programs listed by the players/competitors the proportion of very non-aggressive and non-aggressive shows outweighed the aggressive and very aggressive shows.

Recommendations

Our recommendations regarding the interface of television and sports/athletics fall into two general classifications: those involving directions for future research in this area and those suggesting policy for media.

Future Research

While most research reports conclude with a call for further research to clarify cloudy issues, the present paucity of research in the sports/athletics and media area make it incumbent upon the principal investigators to stress the need for the accumulation of a solid data base on both participation and viewing of sports/athletics.

This is especially important because of the role of sports in child development and socialization. Further, a review of the general study/research in the area of the effects of TV viewing upon children/youth and subsequent behaviour reveals a lack of integration of laboratory research and field studies as well as discrepancies among results emanating from field studies and laboratory research. In view of this fact the laboratory/field approach to study in this area would appear to be the most reasonable. It provides a near optimum balance between control of the variables under study and a realistic setting in which to observe their relationships. The natural controls which sport/athletic games/contests provide such as precise timing, restrictions on the space for both players and spectators, easy identification of the players/competitors as subjects or even the allegiance of fans provide an excellent laboratory/field research setting.

Future studies should include examination of whether there are sex differences in the relationship between media and behaviour in sports/athletics. In order to accomplish this, female sports/athletics groups which are at the same level of organization as the corresponding male groups, or groups which are highly integrated should be sought for study.

Longer term follow-up studies are needed to determine the extended consequences of exposure to anti-social and pro-social media. In the present study it was possible to examine the intermediate term effects of relatively concentrated exposure. Had the media exposure been extended and/or had subjects been observed for longer periods of time, different patterns of results may have emerged.

While the present study attempted to involve a fairly broad age range, the majority of participants were aged 7 to 15 years. More extensive study of older individuals, particularly youth aged 15 to 25, would be desirable.

Media Policy

On the basis of the results of the present study the following recommendations are made:

(1) Pro-social presentations - the present emphasis in televised sports/athletics tends very much toward professional team athletic events. These events generally emphasize winning as the major goal, and, occasionally, 'winning at all costs.' In light of the present results, we recommend increased coverage of sports events in which goals such as playing for 'fun and recreation' are emphasized. Increased coverage of school and other amateur sports would serve a purpose. Increased coverage of sports/athletic events in which pro-social behaviour is common and a matter of custom, e.g., golf and tennis, would also be desirable.

(2) Along the same lines it would be possible to provide increased pro-social input, in activities which by their nature or in practice do not generally provide pro-social models. The introduction of "cameo" features in which the participants in an athletic event being televised are shown engaging in pro-social activities is possible and desirable. This serves the function of providing positive role-models for viewers even though the individuals depicted might not be shown as highly pro-social during the normal course of the telecast. Examples of such cameo presentations exist on American television where the American National Football League has shown professional players engaging in voluntary helping activities.

(3) We have no empirical basis for recommending changes in current programming aside from suggestions for the inclusion of more pro-social content. Our subjects' viewing preferences, include programs which overall depict less explicit and realistic violence than do the non-preferred programs.

(4) A concerted effort should be made to locate extant pro-social audio visual sources to be used by public media and/or all levels of sports/athletic organizations.

(5) Research commissioned and conducted by the television industry as well as government commissions on the Canadian-American scene show the high level of concern regarding the actual and potential effects of TV upon North American children/youth. We strongly recommend an investment of energy and resources to encourage mass media to depict and emphasize the pro-social model and positive behavioural aspects of sports by such things as televising more amateur/school sport activities, and/or utilizing local press, radio and TV to convey the distinction in goal, method and means between amateur sport and professional athletics. Mass media and television in particular could provide a vehicle by which appropriate pro-social role-models could be provided for the large number of citizens involved in youth sport activities. In addition to providing input on teaching technical skills, a strong emphasis should be placed on the physiological, psychological, sociological, and general educational needs of children/youth involved in sports activities.

FINAL REPORT

APPENDIX A

Title: The Effects of Pro-social and Anti-social T.V. Models
on Children and Youth in Selected Sports.

Submitted by: University of Windsor
Sports Institute for Research/Change Agent Research
(SIR/CAR) Task Force

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Commissioned by: The Ontario Royal Commission on Violence in the
Communications Industry
Chairman, Judy LaMarsh
Director of Research, Ken Marchant

Research Project Members:

Seeing - Personal Observation

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Media - Faculty Advisor, Dr. Walter Romanow;

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Asking

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Community Consultants:

Little League Baseball:

District Administrator Don Sharon, Windsor District 5 Little League Baseball;

President George Shelley, Windsor Sandwich East Little League Baseball.

Lacrosse:

President Ted Broad, Windsor Minor Lacrosse Association.

Hockey:

Director Dave Vigar, St. Clair Beach Arena Hockey School;

Associate Director, Jack Costello, St. Clair Summer Hockey School;

Instructor, Gerry Service, St. Clair Summer Hockey School.

APPENDIX B

The University of Windsor Sports Institute for Research/Change Agent Research (SIR/CAR) was invited to have Director Dick Moriarty attend the Toronto workshop of the Research Branch of the Ontario Royal Commission. SIR/CAR, which is a voluntary mutual benefit service organization bringing together theoreticians and practioners to conduct studies/research in a socially significant area of sport/athletics, has been in existence since 1970 and has conducted numerous studies in the area of youth sports:

1. May-September, 1972, "Windsor Sandwich East Little League Baseball as Viewed by SAW Following Participative Clinics," funded by Windsor Sandwich East Little League Baseball and the University of Windsor. (See Ann Marie Guilmette, Dick Moriarty and Megid Ragab, "A Strategy for Changing Organizations: A Case Study of Little League Baseball," to be published in the Journal of Physical Education and Recreation, 1977; abstracted and reprinted from Megid Ragab and Dick Moriarty, "A Strategy for Changing Organizations"; and Ann Marie Guilmette and Dick Moriarty, "Windsor District 5 Little League Baseball," in Proceedings of the Canadian Association of Administrative Sciences, Laval University, Quebec City, Quebec, June 2, 1976.
2. September-April, 1972-73, "Windsor Minor Hockey as Viewed by the SAW Process--Comparison of Standing and No Standing Leagues," funded by Windsor Minor Hockey and the University of Windsor. James Duthie and Dick Moriarty, "Retreading Organizations," Address and Proceeding of the Mental Health Branch of the American Medical Association at their annual meeting on Friday, June 13, 1975, Atlantic City, N.J., available in microfische or handcover from Research in Education.
3. April-December, 1973, "Windsor District 5 Little League Baseball as viewed by SIR/CAR," funded by Canada Council ("Citizenship, Sportsmanship and Manhood in Windsor District 5 Little League Baseball,"). Dick Moriarty and Marge Holman-Prpich, "Change Agent Research for Citizenship, Sportsmanship and Manhood (CAR for CSM)." in Catalogue of Current Ontario University Recreation and Leisure Research. Also available in microfische and hardcover from Research in Education. ED 104871-SP00911.
4. September-April, 1973-74, "Windsor Minor Hockey as Viewed by the SAW Process--Physiological, Psychological and Sociological Evaluation," funded by Windsor Minor Hockey and the University of Windsor. Dick Moriarty and James Duthie, "Sports Institute for Research: (1) What is SIR/CAR; (2) Sports Institute for Research/Change Agent Research--SIR/CAR; (3) Windsor Minor Hockey 1972-73: An Organizational Analysis; (4) Research Project: Change Agent Research for Windsor Minor Hockey;" Sports Sociology Bulletin, Vol. IV (Fall, 1975), 64-84. Also available in microfische and hardcover in Research in Education.
5. June-September, 1974, "Chatham Summer Basketball League as viewed by Change Agent Research," funded by Chatham Summer Basketball League and the University of Windsor. Dick Moriarty

- and Marge Holman-Prpich, "Chatham Summer Basketball League Viewed by Change Agent Research," and Catalogue of Current Ontario University Recreation and Leisure Research. Also available in microfiche and hardcover from Research in Education.
6. September-May, 1975-76, "Windsor Aquatics Club as viewed by Change Agent Research," funded by Canada Council. Dick Moriarty and Gordon Olafson, "Change Agent Research for Windsor Aquatics Club (CAR/WAC)," in Current Ontario University Recreation and Leisure Research. Also available in microfiche and hardcover from Research in Education - ED. 104874-SP009114. See also publication by Prudential Insurance of the address to the Canadian Amateur Swimming Association Annual Workshop held on Thursday, November 20 through Saturday, November 22 at Lake Couchiching, Geneva Park. A presentation on "How to Utilize SIR/CAR in Age Class and School Class Swimming," presented by Dick Moriarty and Gordon Olafson along with postgraduate students Wendy Price, Dave McMurray and Communication Study student Brian Markkanen. This presentation was videotaped and is available from CASA. This presentation, in addition to providing an overview of the SIR/CAR System, presents the results of the Canada Council Study on "Change Agent Research for Age Class Swimming," and the National Centre for Sport and Recreation grant study on "Change Agent Research for School Class Swimming."
 7. January-June, 1975-76, "School class Swimming Versus Age Class Swimming," funded by the National Centre for Sport and Recreation for the Canadian Federation of Secondary School Athletics Associations. Dick Moriarty, Address and Proceedings of the Annual Canadian Association for Health, Physical Education and Recreation at their annual meeting at the University of Saskatchewan, Saskatchewan, Friday, June 28, 1975 on "How SIR/CAR Can Prevent Amateur Sport or Professional Athletic Organizations from Self Destructing." This was a joint presentation of the CAHPER committees on sociology and administrative science. Proceedings published. Also available on microfiche or hardcover from Research in Education.
 8. June-September, 1975, "SIR/CAR Systems Analysis of Windsor Separate School Board's Eight Community School Centres," funded by Windsor Separate School Board. William McRae and Joanne Lazarus, "Survey of Citizens' Participation of the Community Use of Schools, Address and Proceedings of the Ontario Educational Research Council Conference annual meeting on Friday, December 5, 1975 at the Royal York Hotel, Toronto, Ontario."
 9. September, 1975, "SIR/CAR Workshop for University Researchers and Professional Educators from New York, Michigan and Ontario--Socializing Sport or Athletic Excellence in the Interface of Secondary School Sport and Youth Amateur Athletics:

A Cooperative Change Agent Research Project Involving Michigan, New York and Ontario," funded by the National Association for Physical Education College Women/National College Physical Education Association for Men (NAPECW/NCPEAM) Scholarly Direction and Conceptualization of Research Grant. Dick Moriarty, "Higher Education and Transformation: Accumulation and Application of Knowledge by SIR/CAR," Address and Proceedings of the National Association of Physical Education for College Women Conference - Spirit of - 76 Transformation held at Asilomar Park, Pacific Grove, California, June 3-8, 1976. Also available in microfiche and hardcover from Research in Education.

10. August-December, 1975-76, "District 5 Little League Baseball revisited: The Longitudinal Effect of Change Agent Research," funded by Canada Council. Ann Marie Guilmette and Dick Moriarty, "Crisis in Amateur Sports Organizations Viewed by Change Agent Research," Proceedings of the International Congress of Physical Activity Sciences, (July 12, 1976), Quebec City, Quebec.
11. August-December, 1975-76, "The Role of Interschool Sports in the Secondary Schools of Ontario: Socializing Sport or Athletic Excellence in the Ontario Federation of School Athletics Association with Indepth Analysis of Southwestern Ontario Secondary School Association," funded by the Ministry of Education, Ontario. It is anticipated that the results of this study will be published in whole or part by the Ministry of Education, Ontario in the Spring of 1977. Dick Moriarty and Helen Gurney will present "The Role of Interschool Sports in the Secondary Schools of Ontario as Viewed by Change Research," at the Pre AAHPER Conference on "Contemporary Research on Youth Sports," March 23-24, funded and proceedings published by the University of Washington, Seattle, Washington.

RESEARCH AND DEVELOPMENT AUDIO VISUAL CHART
FOR PRO-SOCIAL, ANTI-SOCIAL AND CONTROL T/V TAPES

Representative of
Pro-Social Behavior

Representative of
Anti-Social Behavior

Hockey

1957 Stanley Cup
(30 Mins., 16 mm & videotape)
New York vs. Montreal

1966 Stanley Cup Cut #I
(25 mins., 16 mm & videotape)
Toronto vs. Montreal

1968 Stanley Cup Cut #I
(25 mins., 16 mm & videotape)
St. Louis vs. Montreal

1970 Stanley Cup
(30 mins., 16 mm & videotape)
Boston vs. St. Louis

1971 Stanley Cup
(30 mins., 16 mm & videotape)
Montreal vs. Chicago

1975 Stanley Cup
(25 mins., 16 mm & videotape)
Philadelphia vs. Boston

1976 N.H.L. Montreal vs.
Vancouver Canucks
(55 mins., videotape)

1956 Stanley Cup
(30 mins., 16 mm & videotape)
Montreal vs. Detroit

1959 Stanley Cup
(25 mins., 16 mm & videotape)
Montreal vs. Toronto

1967 Stanley Cup Cut #II
(25 mins., 16 mm & videotape)
Montreal vs. St. Louis

1969 Stanley Cup Cut #II
(25 mins., 16 mm & videotape)
Montreal vs. St. Louis

1973 Stanley Cup
(30 mins., 16 mm & videotape)
Boston vs. Montreal

1976 U.S.S.R. Red Army vs.
N.H.L. Philadelphia Flyers
(55 mins., videotape)

1976 N.H.L. Philadelphia vs.
Montreal Canadians
(60 mins., videotape)

Control

C.C.M. Instructional Hockey,
(40 mins., 16 mm & videotape)

Lacrosse

Lacrosse - Cut #1 - The Fastest
Game on 2 Feet
(14 mins., 16 mm & VTR)

Lacrosse - Cut #2 - Lacrosse
is Everybody's Game
(14.5 mins., 16 mm & VTR)

Mann Cup Lacrosse Part I
(60 mins., videotape)
Vancouver vs. Peterborough

Minto Cup Lacrosse
(28 mins., videotape)
Mississauga vs. Burnaby

Mann Cup Lacrosse Part II
(12 mins., videotape)
Vancouver vs. Peterborough

Control

Skill Films Level I
Lacrosse
(20 mins., 16 mm & VTR)

Research and Development...(cont'd)

Baseball

1970 All Star Game
(27 mins., 16 mm & videotape)
Mets vs. Orioles

1974 World Series
(27 mins., 16 mm & videotape)
L.A. vs. Oakland

1975 World Series
(37 mins., 16 mm & videotape)
Cincinnati vs. Boston

1969 World Series
(40 mins., 16 mm & videotape)
Mets vs. Baltimore

1970 World Series
(30 mins., 16 mm & videotape)
Cinci vs. Baltimore

1972 World Series
(40 mins., 16 mm & videotape)
Cinci vs. Oakland

Control

All the Self There Is
E.R. Moore Co.
(13 mins., videotape)

Every Child a Winner
State Department of Education
Georgia
(13 mins., 16 mm & videotape)




Basketball

Basketball Today
(29 mins., 16 mm & videotape)

GROUP OBSERVATION SHEET

Date: _____ Time: _____ Name of Film: _____

Place: _____ Film: _____ Social Players & Sport: _____

# Reading Tape	Group # in Group	Time				Vocal Behaviour + -	
		0 mins					
		3 mins					
		6 mins					
		9 mins					
		12 mins					
		15 mins					
		18 mins					
		21 mins					
		24 mins					
		27 mins					
		30 mins					
		33 mins					
		36 mins					
		39 mins					
		42 mins					
		45 mins					
TOTALS							

DATA RECORDING SHEET

Key: ✓ = hostile response
X = non-hostile response

[illegible]

Referee S H F
Coach S H F
Team -- -- --

APPENDIX F
RAW DATA SHEET
LACROSSE AND HOCKEY

Observer _____ League _____ Date _____
Team _____ Opposition _____ Location _____
Period 1 2 3 Sport _____ Score _____

Physical Aggression

	Soft	Medium	Hard
	12-13	14-15	16-17
Stick - Stick			
	18-19	20-21	22-23
Stick - Body			
	24-25	26-27	28-29
Body - Body			

Verbal & Non-Verbal Aggression

	referee	coach	teammates	opponents	self
player	30	31	32	33	34
V.A. coach	35	36	37	38	39
player	40	41	42	43	44
Non V.A. coach	45	46	47	48	49

ProSocial Behaviour

	teammates	opponents
player	50	51
V coach	52	53
player	54	55
Non V coach	56	57

RAW DATA SHEET
BASEBALL

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NAME _____ LEAGUE _____ DATE _____
OPPOSITION _____ TEAM _____
INNING _____ LOCATION _____

	Referee	Coach	Teamates	Opponents	Self
Player					
<u>V.A.</u>					
Coach					
Player					
<u>Non V.A.</u>					
Coach					

	Teamates	Opponents
Players		
V		
Coach		
<u>Pro-Soc.</u>		
Players		
Non -V		
Coach		

	Soft	Medium	Hard
Equipment-			
Body			
<u>P.A.</u>			
Body Body			

TABLE G.6.1a

Summary of Analyses of Variance on Physical Aggression for Hockey Teams

	<u>Source of Variation</u>	<u>F* Ratio</u>	<u>Probability + Level</u>
Pre treatment	Age	1.03	>.20
	Treatment	1.94	>.20
Mid treatment I	Age	2.09	>.20
	Treatment	3.52	>.10
Mid treatment II	Age	2.96	>.10
	Treatment	3.28	>.10
Post treatment	Age	.09	>.20
	Treatment	1.41	>.20

*F Ratios are ratios of the variability between groups divided by the variability within groups. The higher the value indicated the more the treatment groups differed from one another.

+ Probability level indicates how frequently one would expect to obtain differences as large or larger than this due to chance variation. For example, < .20 indicates that due chance alone would expect differences this large more than 20 times of 100.

TABLE G.6.2

Mean Values* for Age and Treatment
Conditions (Media Input) Physical Aggression - Hockey

<u>Pre-treatment</u>				
	Pro-Social	Anti-Social	Control	Row Mean
Younger (6-9)	8.05	6.75	7.02	7.27
Middle (10-13)	2.80	13.52	3.20	6.51
Older (14-17)	2.24	6.29	2.31	3.61
Col. Means	4.36	8.85	4.18	
<u>Mid-treatment I</u>				
	Pro-Social	Anti-Social	Control	Row Mean
Younger (6-9)	48.99	59.00	17.68	41.89
Middle (10-13)	53.90	20.30	5.72	26.64
Older (14-17)	18.49	26.01	10.40	18.30
Col. Means	40.46	35.10	11.27	
<u>Mid-treatment II</u>				
	Pro-Social	Anti-Social	Control	Row Mean
Younger (6-9)	29.04	34.77	30.60	31.47
Middle (10-13)	43.26	31.68	18.81	31.25
Older (14-17)	25.41	25.20	3.64	18.08
Col. Means	32.57	30.55	17.68	
<u>Post-treatment</u>				
	Pro-Social	Anti-Social	Control	Row Mean
Younger (6-9)	57.04	73.59	58.00	62.88
Middle (10-13)	42.60	43.25	84.00	56.62
Older (14-17)	65.50	36.12	83.88	61.83
Col. Means	55.05	50.99		

* Since some variation occurred in the number of players and the observation time in the age/treatment combinations, the raw values were corrected according to the formula:

$$\text{mean value} = \frac{\text{number of occurrences of behaviour}}{\text{number of players} \times \text{number of minutes}} \times 100$$

TABLE G 6.3

Summary of Analyses of Variance on Non-Verbal
Aggression for Hockey Teams

	<u>Source of Variation</u>	<u>F Ratio</u>	<u>Probability Level</u>
Pre treatment	Age	1.29	>.20
	Treatment	.47	>.20
Mid treatment I	Age	.34	>.20
	Treatment	1.77	>.20
Mid treatment II	Age	1.36	>.20
	Treatment	2.66	>.10
Post treatment	Age	.66	>.20
	Treatment	1.54	>.20

TABLE G 6.4

Mean Values for Age and Treatment Conditions
Non-Verbal Aggression - Hockey

Pre-treatment

	Pro-Social	Anti-Social	Control	Row Mean
Younger (6-9)	.70	.90	2.60	1.40
Middle (10-13)	.14	1.04	.10	.43
Older (14-17)	.64	1.02	.44	.70
Col. Means	.49	.99	1.05	

Mid-treatment I

	Pro-Social	Anti-Social	Control	Row Mean
Younger (6-9)	4.14	.59	.85	1.86
Middle (10-13)	2.10	.35	1.30	1.25
Older (14-17)	.86	1.02	1.60	1.16
Col. Means	1.08	.64	1.25	

Mid-treatment II

	Pro-Social	Anti-Social	Control	Row Mean
Younger (6-9)	1.56	2.28	1.62	1.82
Middle (10-13)	1.25	1.32	.88	1.15
Older (14-17)	1.32	3.84	1.17	2.11
Col. Means	1.38	2.48	1.22	

Post-treatment

	Pro-Social	Anti-Social	Control	Row Mean
Younger (6-9)	.92	1.32	.80	1.01
Middle (10-13)	1.80	.75	1.05	1.20
Older (14-17)	2.00	.84	1.44	1.43
Col. Means	1.57	.97	1.10	

TABLE G 6.5

Summary of Analyses of Variance on Verbal
Aggression for Hockey Teams

	<u>Source of Variation</u>	<u>F Ratio</u>	<u>Level of Significance</u>
Pre treatment	Age	.90	>.20
	Treatment	1.06	>.20
Mid treatment I	Age	1.56	>.20
	Treatment	.64	>.20
Mid treatment II	Age	.36	>.20
	Treatment	.17	>.20
Post treatment	Age	.28	>.20
	Treatment	8.18	<.05*

TABLE G 6.6

Mean Values for Age and Treatment
Conditions Verbal Aggression - Hockey

Pre-treatment

	Pro- Social	Anti- Social	Control	Row Mean
Younger (6-9)	6.30		.13	2.14
Middle (10-13)	.32	.52	.20	.35
Older (14-17)	.16			.05
Col. Means	2.26	.17	.11	

Mid-treatment I

	Pro- Social	Anti- Social	Control	Row Mean
Younger (6-9)	5.52	1.77	.51	2.60
Middle (10-13)	.70	.35	1.04	.70
Older (14-17)		1.02	.20	.41
Col. Means	2.07	1.05	.58	

Mid-treatment II

	Pro- Social	Anti- Social	Control	Row Mean
Younger (6-9)	2.08	.59	.54	1.07
Middle (10-13)		.99	.77	.59
Older (14-17)	.33	1.20	.39	.64
Col. Means	.80	.93	.57	

Post-treatment

	Pro- Social	Anti- Social	Control	Row Mean
Younger (6-9)	2.30	.33	1.60	1.41
Middle (10-13)	3.30		.70	1.33
Older (14-17)	1.75	.63	.72	1.03
Col. Means	2.45	.32	1.01	

TABLE G 6.7

Summary of Analyses of Variance on Pro-Social
Behaviour for Hockey Teams

	<u>Source of Variation</u>	<u>F Ratio</u>	<u>Level of Significance</u>
Pre treatment	Age	3.65	>.10
	Treatment	.77	>.20
Mid treatment I	Age	2.22	>.20
	Treatment	1.36	>.20
Mid Treatment II	Age	22.39	<.01*
	Treatment	2.03	>.20
Post treatment	Age	3.02	>.10
	Treatment	11.32	<.025*

TABLE G 6.8

Mean Values for Age and Treatment Conditions
Pro-Social Behaviour - Hockey

Pre-treatment

	Pro-Social	Anti-Social	Control	Row Mean
Younger (6-9)	1.40	.90	1.43	1.24
Middle (10-13)	.98	1.04	.20	.74
Older (14-17)	.48	.68	.22	.46
Col. Means	.95	.87	.62	

Mid-treatment I

	Pro-Social	Anti-Social	Control	Row Mean
Younger (6-9)	6.90	11.21	.51	6.21
Middle (10-13)	4.90	.35	.65	1.97
Older (14-17)	2.15		.20	.78
Col. Means	4.65	3.85	.45	

Mid-treatment II

	Pro-Social	Anti-Social	Control	Row Mean
Younger (6-9)	9.36	6.27	5.94	7.19
Middle (10-13)	2.10	3.63	.99	2.24
Older (14-17)	1.32	1.44	.13	.96
Col. Means	4.26	3.78	2.35	

Post-treatment

	Pro-Social	Anti-Social	Control	Row Mean
Younger (6-9)	11.96	8.25	8.40	9.54
Middle (10-13)	12.30	7.25	8.40	9.32
Older (14-17)	11.00	2.10	7.20	6.77
Col. Means	11.75	5.87	8.00	

TABLE G 6.9

Correlations Among Summary Variables at Four
Observation Times - Hockey

Pre-treatment

	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
1. TV selection	1.00	-.03	.01	.14	-.64
2. Physical Aggression		1.00	.45	.27	-.23
3. Non-Verbal Aggression			1.00	-.08	.02
4. Verbal Aggression				1.00	-.01
5. Pro-Social					1.00

Mid-treatment I

	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
1. TV selection	1.00	-.26	.23	.21	-.21
2. Physical Aggression		1.00	.38	.53	.88
3. Non-Verbal Aggression			1.00	.83	.30
4. Verbal Aggression				1.00	.55
5. Pro-Social					1.00

Mid-treatment II

	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
1. TV selection	1.00	-.72	.25	.36	.05
2. Physical Aggression		1.00	.14	-.04	.46
3. Non-Verbal Aggression			1.00	.29	.06
4. Verbal Aggression				1.00	.60
5. Pro-Social					1.00

Post-treatment

	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
1. TV selection	1.00	.31	-.45	-.39	-.53
2. Physical Aggression		1.00	.24	-.26	.17
3. Non-Verbal Aggression			1.00	.47	.52
4. Verbal Aggression				1.00	.73
5. Pro-Social					1.00

TABLE 6-10

Correlations Among "Raw" Variables--Hockey Groups

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
PA-stick-stick (soft)																							
PA-stick-stick (med.)	.69																						
PA-stick-stick (hard)	.14	.58																					
PA-stick-body (soft)	.87	.50	.08																				
PA-stick-body (med.)	.73	.57	.32	.80																			
PA-stick-body (hard)	.24	.30	.40	.24	.44																		
PA-body-body (soft)	.46	.20	-.03	.57	.44	.10																	
PA-body-body (med.)	.45	.24	.02	.47	.49	.24	.79																
PA-body-body (hard)	.35	.25	.10	.43	.56	.29	.42	.65															
VA-player-ref.-coach	-.03	.08	-.02	-.09	-.04	-.04	.02	.03															
VA-player-teamates or opponents	-.16	-.03	.06	-.22	-.14	-.07	-.06	.11	.13	.01	.06	.11	.05	-.01	.00	.04	.27	.10	-.00	-.11	.27	.33	.03
VA-player-self	.12	.30	-.03	.03	.05	.01	.11	.13	.01	.13	.09												
VA-coach-ref.-coach	-.06	-.05	-.02	.01	-.03	-.03	.05	-.05	-.05	-.05	.12	.05	-.05	-.07	-.03	.04	.28	.21	.02	-.04	-.04	.28	.04
VA-coach-teamates or opponents	.02	-.04	-.02	.05	.05	.11	.05	-.05	-.01	-.07	.05	.04	-.05	-.01	.00	.03	.07	.06	-.06	.02	-.04	.44	.04
NVA-player-ref.-coach	.05	.02	-.02	.04	.02	.03	.04	.04	.00	-.03	.24	.05	.04	-.03	-.03	.04	.27	.10	.02	-.08	.06	.33	.03
NVA-player-teamates or opponents	.15	.18	.14	.15	.11	.07	.28	.27	.04	.05	.09	.15	.12	.13	.21	.28	.06	.06	-.01	.36	.06	.37	-.04
NVA-coach-ref.-coach	.03	-.00	-.03	.10	.03	-.06	.02	.21	.10	-.08	-.08	.06	-.01	-.08	-.02	.06	.16	.06	-.08	-.08	-.01	.14	.28
NVA-coach-teamates or opponents	-.07	-.09	-.05	.01	-.08	.02	.02	.11	.08	-.14	-.05	.05	-.05	-.03	.03	.03	.10	.03	.00	.36	-.06	.11	.37
VPS-player-teamates or opponents	.31	.70	.57	.11	.26	.33	.17	.27	.15	.26	.36	.01	.10	.06	.20	.18	.20	.02	.03	.26	.11	.37	.03
VPS-coach-teamates or opponents	.15	.08	-.08	.17	.10	.03	.03	.06	.02	-.06	.06	.12	.13	.14	.05	.06	.34	-.07	.15	.06	.14	.07	.13
NVPS-player-teamates or opponents	.52	.80	.55	.35	.45	.44	.28	.33	.26	.13	.26	.06	.06	.10	.00	.30	.06	.10	.03	.26	.14	.26	.03
NVPS-coach-teamates or opponents	.13	.01	-.07	.15	.11	.04	.04	.04	.09	.18	.08	.09	.04	.03	.03	.10	.06	.37	.03	.26	.14	.26	.03

—Coefficients attaining absolute values of .17 and larger reach statistical significance at the 5% level of confidence. Values of .22 and larger are significant at the 10% confidence level.

Identification of "Raw" Variables in Table G 6.10

Variable
Number

Physical Aggression Measures

- 1 player's use of stick against stick of another player (soft)
- 2 player's use of stick against stick of another player (medium)
- 3 player's use of stick against stick of another player (hard)
- 4 player's use of stick against body of another player (soft)
- 5 player's use of stick against body of another player (medium)
- 6 player's use of stick against body of another player (hard)
- 7 player's use of body against body of another player (soft)
- 8 player's use of body against body of another player (medium)
- 9 player's use of body against body of another player (hard)

Verbal Aggression Measures

- 10 verbal aggression by player toward official or coach.
- 11 verbal aggression by player toward teammates or opponents
- 12 verbal aggression by player toward self
- 13* verbal aggression by coach toward another coach or official
- 14* verbal aggression by coach toward own players or opposing players

Non-Verbal Aggression Measures

- 15 non-verbal aggression by player toward official or coach
- 16 non-verbal aggression by player toward teammates or opponents
- 17 non-verbal aggression by player toward self
- 18* non-verbal aggression by coach toward another coach or official
- 19* non-verbal aggression by coach toward own players or opposing players

Pro-Social

- 20 verbal pro-social act by player toward own teammates or opponents
- 21* verbal pro-social act by coach toward own players or opposing players
- 22 non-verbal pro-social act by player toward teammates or opponents
- 23* non-verbal pro-social act by coach toward teammates or opponents

* Items not included in the summary variables.

TABLE G.6.11

Summary of Analyses of Variance on Physical
Aggression for Lacrosse Teams

	<u>Source of Variation</u>	<u>F Ratio</u>	<u>Level of Significance</u>
Pre treatment	Age	11.29	<.025*
	Treatment	5.85	>.05
	Age x treat.	.50	>.20
Mid treatment	Age	70.43	<.005*
	Treatment	4.03	>.10
	Age x treat.	5.10	>.05
Post treatment	Age	.26	>.20
	Treatment	.20	>.20
	Age x treat.	2.43	>.20

TABLE G 6.12

*
Mean Values for Age and Treatment Conditions
Physical Aggression - Lacrosse

Pre-treatment

	Pro-Social	Anti-Social	Control	Row Mean
Younger(7-10)	29.10	41.40	40.10	36.87
Middle (11-14)	42.59	48.95		45.77
Older (15-20)	52.18	54.89		53.54
Col. Means	41.29	48.41	40.10	

Mid-treatment

	Pro-Social	Anti-Social	Control	Row Mean
Younger(7-10)	31.10	30.40	28.20	29.90
Middle (11-14)	39.15	35.48		37.32
Older (15-20)	40.97	39.38		40.18
Col. Means	37.07	35.09	28.20	

Post-treatment

	Pro-Social	Anti-Social	Control	Row Mean
Younger(7-10)	27.35	35.60	32.80	31.92
Middle (11-14)	39.19	30.34		34.77
Older (15-20)	32.00	39.95		35.98
Col. Means	32.85	35.30	32.80	

*Average number of instances per game period.

TABLE G 6.13

Summary of Analyses of Variance on Non-Verbal
Aggression for Lacrosse Teams

	<u>Source of Variation</u>	<u>F Ratio</u>	<u>Level of Significance</u>
Pre treatment	Age	.94	>.20
	Treatment	1.96	>.20
	Age x treat.	2.39	>.20
Mid treatment	Age	6.52	>.05
	Treatment	1.71	>.20
	Age x treat.	2.28	>.20
Post treatment	Age	4.96	>.05
	Treatment	1.09	>.20
	Age x treat.	.81	>.20

TABLE G 6.14

Mean Values for Age and Treatment Conditions
Non-Verbal Aggression - Lacrosse

Pre-treatment

	Pro-Social	Anti-Social	Control	Row Mean
Younger(7-10)	.75	.80	.85	.80
Middle (11-14)	.65	1.89		1.27
Older (15-20)	1.02	1.07		1.05
Col. Means	.81	1.25	.85	

Mid-treatment

	Pro-Social	Anti-Social	Control	Row Mean
Younger(7-10)	1.70	1.35	2.20	1.75
Middle (11-14)	2.93	4.43		3.68
Older (15-20)	2.22	3.00		2.61
Col. Means	2.28	2.93	2.20	

Post-treatment

	Pro-Social	Anti-Social	Control	Row Mean
Younger(7-10)	3.45	2.40	2.76	2.87
Middle (11-14)	1.82	1.83		1.83
Older (15-20)	1.20	1.50		1.35
Col. Means	2.16	1.91	2.76	

TABLE G 6.15

Summary of Analyses of Variance on Verbal
Aggression for Lacrosse Teams

	<u>Source of Variation</u>	<u>F Ratio</u>	<u>Level of Significance</u>
Pre treatment	Age	2.02	>.20
	Treatment	.00	>.20
	Age x treat.	.26	>.20
Mid treatment	Age	1.04	>.20
	Treatment	.74	>.20
	Age x treat.	.36	>.20
Post treatment	Age	.88	>.20
	Treatment	.36	>.20
	Age x treat.	.53	>.20

TABLE G 6.16

Mean Values for Age and Treatment Conditions
Verbal Aggression - Lacrosse

Pre-treatment

	Pro- Social	Anti- Social	Control	Row Mean
Younger(7-10)	1.65	.45	1.00	1.03
Middle (11-14)	1.04	1.98		1.51
Older (15-20)	3.82	3.51		3.67
Col. Means	2.17	1.98	1.00	

Mid-treatment

	Pro- Social	Anti- Social	Control	Row Mean
Younger(7-10)	.80	.30	.60	.57
Middle (11-14)	.33	2.00		1.17
Older (15-20)	1.55	4.08		2.82
Col. Means	.89	2.13	.60	

Post-treatment

	Pro- Social	Anti- Social	Control	Row Mean
Younger(7-10)	1.05	.45	.65	.72
Middle (11-14)	.85	1.36		1.11
Older (15-20)	.85	.70		.78
Col. Means	.92	.84	.65	

TABLE G 6.17

Summary of Analyses of Variance on Pro-Social
Behaviour for Lacrosse Teams

	<u>Source of Variation</u>	<u>F Ratio</u>	<u>Level of Significance</u>
Pre treatment	Age	.18	>.20
	Treatment	.43	>.20
	Age x treat.	3.84	>.10
Mid treatment	Age	.06	>.20
	Treatment	.21	>.20
	Age x treat.	.25	>.20
Post treatment	Age	.02	>.20
	Treatment	.15	>.20
	Age x treat.	.12	>.20

TABLE 6 6.18

Mean Values for Age and Treatment Conditions
Pro-Social Behaviour - Lacrosse

Pre-treatment

	Pro-Social	Anti-Social	Control	Row Mean
Younger(7-10)	9.60	2.40	3.50	5.17
Middle (11-14)	4.79	8.27		6.53
Older (15-20)	7.28	6.95		7.12
Col. Means	7.22	5.87	3.50	

Mid-treatment

	Pro-Social	Anti-Social	Control	Row Mean
Younger(7-10)	5.80	4.45	3.30	4.52
Middle (11-14)	4.00	4.65		4.33
Older (15-20)	3.57	6.90		5.24
Col. Means	4.46	5.33	3.30	

Post-treatment

	Pro-Social	Anti-Social	Control	Row Mean
Younger(7-10)	3.85	1.95	5.60	3.80
Middle (11-14)	5.23	4.90		5.07
Older (15-20)	7.00	3.95		5.48
Col. Means	5.36	3.60	5.60	

TABLE G 6.19

Correlations Among Summary Variables at Three
Observation Times - Lacrosse

Pre-treatment

	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
1. TV Selection	1.00	.33	.46	.38	.58
2. Physical Aggression		1.00	.36	.67	.56
3. Non-Verbal Aggression			1.00	.28	.36
4. Verbal Aggression				1.00	.50
5. Pro-Social					1.00

Mid-treatment

	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
1. TV Selection	1.00	-.10	.28	.20	.30
2. Physical Aggression		1.00	.26	.34	.05
3. Non-Verbal Aggression			1.00	.22	.00
4. Verbal Aggression				1.00	.86
5. Pro-Social					1.00

Post-treatment

	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
1. TV Selection	1.00	-.28	-.42	.68	-.44
2. Physical Aggression		1.00	-.26	-.11	.28
3. Non-Verbal Aggression			1.00	-.24	-.03
4. Verbal Aggression				1.00	.30
5. Pro-Social					1.00

TABLE 66.20
Correlations Among "Raw" Variables—Lacrosse Group

[illegible]

Note: Coefficients attaining absolute values of .12 and larger reach statistical significance at the 5% confidence level. Values of .16 and larger reach the 1% confidence level.
Blanks indicate that no coefficients could be computed due to low occurrence of the variable.

Identification of "Raw" Variables in Table G-6.20

Variable
Number

Physical Aggression Measures

- 1 player's use of stick against stick of another player (soft)
- 2 player's use of stick against stick of another player (medium)
- 3 player's use of stick against stick of another player (hard)
- 4 player's use of stick against body of another player (soft)
- 5 player's use of stick against body of another player (medium)
- 6 player's use of stick against body of another player (hard)
- 7 player's use of body against body of another player (soft)
- 8 player's use of body against body of another player (medium)
- 9 player's use of body against body of another player (hard)

Verbal Aggression Measures

- 10 verbal aggression by player toward referee
- 11 verbal aggression by player toward coach
- 12 verbal aggression by player toward teammates
- 13 verbal aggression by player toward opponents
- 14 verbal aggression by player toward self
- 15* verbal aggression by coach toward referee
- 16* verbal aggression by coach toward coach
- 17* verbal aggression by coach toward teammates
- 18* verbal aggression by coach toward opponents
- 19* verbal aggression by coach toward self

Non-Verbal Aggression Measures

- 20 non-verbal aggression by player toward referee
- 21 non-verbal aggression by player toward coach
- 22 non-verbal aggression by player toward teammates
- 23 non-verbal aggression by player toward opponents
- 24 non-verbal aggression by player toward self
- 25* non-verbal aggression by coach toward referee
- 26* non-verbal aggression by coach toward coach
- 27* non-verbal aggression by coach toward teammates
- 28* non-verbal aggression by coach toward opponents
- 29* non-verbal aggression by coach toward self

Pro-Social

- 30 verbal pro-social act by player toward teammates
- 31 verbal pro-social act by player toward opponents
- 32* verbal pro-social act by coach toward teammates
- 33* verbal pro-social act by coach toward opponents
- 34* non-verbal pro-social act by player toward teammates
- 35* non-verbal pro-social act by player toward opponents
- 36* non-verbal pro-social act by coach toward teammates
- 37* non-verbal pro-social act by coach toward opponents

* Items not included in the summary variables.

TABLE G 6.21

Summary of Analyses of Variance on Physical
Aggression for Baseball Teams

	<u>Source of Variation</u>	<u>F Ratio</u>	<u>Level of Significance</u>
Pre- treatment	Age	9.89	< .05*
	Treatment	4.17	> .05
	Interaction	2.09	> .20
Mid- treatment	Age	2.69	> .10
	Treatment	.30	> .20
	Interaction	.67	> .20
Post- treatment	Age	.60	> .20
	Treatment	2.46	> .10
	Interaction	.90	> .20

TABLE G 6.22

*
Mean Values for Age and Treatment Conditions
Physical Aggression - Baseball

Pre-treatment

	Pro- -Social	Anti- Social	Control	Row Mean
Younger(6-8)	1.20	3.60	2.40	2.40
Older (11-12)	.20	.90	1.40	.83
Col. Means	.70	2.25	1.40	

Mid-treatment

	Pro- Social	Anti- Social	Control	Row Mean
Younger(6-8)	1.80	1.00	1.40	1.40
Older (11-12)	.23	.48	.85	.52
Col. Means	1.01	.74	.85	

Post-treatment

	Pro- Social	Anti- Social	Control	Row Mean
Younger(6-8)	.60	.80	1.40	.70
Older (11-12)	.62	.55	.20	.46
Col. Means	.61	.68	.20	

* Average number of instances per inning.

TABLE G. 6.23

Summary of Analyses of Variance on Non-Verbal
Aggression for Baseball Teams

	<u>Source of Variation</u>	<u>F Ratio</u>	<u>Level of Significance</u>
Pre- treatment	Age	.18	>.20
	Treatment	1.05	>.20
	Interaction	3.02	>.10
Mid- treatment	Age	5.92	>.10
	Treatment	1.98	>.20
	Interaction	.18	>.20
Post- treatment	Age	26.60	<.005*
	Treatment	12.05	<.025*
	Interaction	1.15	>.20

TABLE G 6.24

Mean Values for Ages and Treatment Conditions
Non-Verbal Aggression - Baseball

Pre-treatment

	Pro-Social	Anti-Social	Control	Row Mean
Younger(6-8)	3.60	.50		2.05
Older (11-12)	2.20	2.80	1.40	2.13
Col. Means	2.90	1.65	1.40	

Mid-treatment

	Pro-Social	Anti-Social	Control	Row Mean
Younger(6-8)	.40	1.00		.70
Older (11-12)	1.40	1.70	.90	1.33
Col. Means	.90	1.35	.90	

Post-treatment

	Pro-Social	Anti-Social	Control	Row Mean
Younger(6-8)	.45	.15		.30
Older (11-12)	2.05	1.20	.25	1.17
Col. Means	1.25	.68	.25	

TABLE G6.25

Summary of Analyses of Variance on Verbal
Aggression for Baseball Teams

	<u>Source of Variation</u>	<u>F Ratio</u>	<u>Level of Significance</u>
Pre- treatment	Age	.18	>.20
	Treatment	1.96	>.20
	Interaction	.00	>.20
Mid- treatment	Age	7.35	<.05*
	Treatment	1.79	>.20
	Interaction	1.20	>.20
Post- treatment	Age	14.98	<.025*
	Treatment	.70	>.20
	Interaction	38.20	<.005*

TABLE C 6.26

Mean Values for Ages and Treatment Conditions
Verbal Aggression - Baseball

Pre-treatment

	Pro-Social	Anti-Social	Control	Row Mean
Younger(6-8)	.65	1.50		1.08
Older (11-12)	2.60	2.60	6.15	3.78
Col. Means	1.63	2.05	6.15	

Mid-treatment

	Pro-Social	Anti-Social	Control	Row Mean
Younger(6-8)	1.80	1.10		1.45
Older (11-12)	5.58	2.70	3.45	3.91
Col. Means	3.69	1.90	3.45	

Post-treatment

	Pro-Social	Anti-Social	Control	Row Mean
Younger(6-8)	.25	3.25		1.75
Older (11-12)	6.13	1.90	4.40	4.14
Col. Means	3.19	2.58	4.40	

TABLE .G.6.27

Summary of Analyses of Variance on Pro-Social
Behaviour for Baseball Teams

	<u>Source of Variation</u>	<u>F Ratio</u>	<u>Level of Significance</u>
Pre- treatment	Age	1.96	$>.20$
	Treatment	1.59	$>.20$
	Interaction	.01	$>.20$
Mid- treatment	Age	20.32	$<.01^*$
	Treatment	2.35	$>.10$
	Interaction	.46	$>.20$
Post- treatment	Age	4.62	$>.05$
	Treatment	1.64	$>.20$
	Interaction	4.83	$>.05$

TABLE G 6:28

Mean Values for Ages and Treatment Conditions
Pro-Social Behaviour - Baseball

Pre-treatment

	Pro-Social	Anti-Social	Control	Row Mean
Younger(6-8)	20.20	6.90		13.55
Older (11-12)	29.95	18.10	18.55	22.20
Col. Means	25.08	12.50	18.55	

Mid-treatment

	Pro-Social	Anti-Social	Control	Row Mean
Younger(6-8)	7.10	4.00		5.55
Older (11-12)	21.53	14.65	13.95	16.71
Col. Means	14.32	9.33	13.95	

Post-treatment

	Pro-Social	Anti-Social	Control	Row Mean
Younger(6-8)	7.85	11.10		9.48
Older (11-12)	41.35	10.73	22.23	24.77
Col. Means	24.60	10.92	22.23	

TABLE G 6.29

Correlations Among Summary Variables at Three
Observation Times - Baseball

Pre-treatment

	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
1. TV Selection	1.00	.26	.41	-.20	.50
2. Physical Aggression		1.00	.54	.25	-.08
3. Non-Verbal Aggression			1.00	.07	.40
4. Verbal Aggression				1.00	.12
5. Pro-Social					1.00

Mid-treatment

	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
1. TV Selection	1.00	-.06	.64	.57	.44
2. Physical Aggression		1.00	.10	-.13	-.53
3. Non-Verbal Aggression			1.00	.54	.38
4. Verbal Aggression				1.00	.77
5. Pro-Social					1.00

Post-treatment

	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
1. TV Selection	1.00	-.60	.13	.26	.63
2. Physical Aggression		1.00	.25	-.10	-.11
3. Non-Verbal Aggression			1.00	.48	.50
4. Verbal Aggression				1.00	.82
5. Pro-Social					1.00

Identification of "Raw" Variables in Table G 6.30

Variable
Number

Verbal Aggression Measures

- | | |
|-----|--|
| 1 | verbal aggression by player toward referee |
| 2 | verbal aggression by player toward coach |
| 3 | verbal aggression by player toward teammates |
| 4 | verbal aggression by player toward opponents |
| 5 | verbal aggression by player toward self |
| 6* | verbal aggression by coach toward referee |
| 7* | verbal aggression by coach toward coach |
| 8* | verbal aggression by coach toward teammates |
| 9* | verbal aggression by coach toward opponents |
| 10* | verbal aggression by coach toward self |

Non-Verbal Aggression Measures

- | | |
|-----|--|
| 11 | non-verbal aggression by player toward referee |
| 12 | non-verbal aggression by player toward coach |
| 13 | non-verbal aggression by player toward teammates |
| 14 | non-verbal aggression by player toward opponents |
| 15 | non-verbal aggression by player toward self |
| 16* | non-verbal aggression by coach toward referee |
| 17* | non-verbal aggression by coach toward coach |
| 18* | non-verbal aggression by coach toward teammates |
| 19* | non-verbal aggression by coach toward opponents |
| 20* | non-verbal aggression by coach toward self |

Verbal Pro-Social

- | | |
|-----|--|
| 21 | verbal aggression by player toward teammates |
| 22 | verbal aggression by player toward opponents |
| 23* | verbal aggression by coach toward teammates |
| 24* | verbal aggression by coach toward opponents |

Non-Verbal Pro-Social

- | | |
|-----|--|
| 25 | non-verbal aggression by player toward teammates |
| 26 | non-verbal aggression by player toward opponents |
| 27* | non-verbal aggression by coach toward teammates |
| 28* | non-verbal aggression by coach toward opponents |

Physical Aggression Measures

- | | |
|----|--|
| 29 | player's use of equipment toward body of another player (soft) |
| 30 | player's use of equipment toward body of another player (medium) |
| 31 | player's use of equipment toward body of another player (hard) |
| 32 | player's use of body toward body of another player (soft) |
| 33 | player's use of body toward body of another player (medium) |
| 34 | player's use of body toward body of another player (hard) |

* Items not included in the summary variables.

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